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COURSE OF LECTURES
ON
DISEASES OF THE SKIN;
THEIR
HISTORY, PATHOLOGY, AND TREATMENT.

Delivered in the Middlesex Hospital, during the Summer Session, 1842, by

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LECTURE IX.

IN my last lecture I described to you the course and symptoms of rubeola, together with its cause, and the phenomena exhibited in its mode of transmission; to-day we will proceed to consider the treatment of the disease, but previously to so doing it will be proper to determine the nature of its prognosis.

Measles are generally a mild affection, particularly when they run their course regularly; when the season is temperate, the inflammation of mucous membranes moderate, and the individual in whom it occurs in a state of sound bodily health. Under such circumstances the disease is unattended with danger, but when any cause of nervous debility is present, measles are serious, and may be fatal in their issue. The conditions which tend to exasperate the effects of rubeola are dentition, pregnancy, parturition; pre-existing disorder of the mucous membranes, particularly that of the lungs; retrocession of the cutaneous efflorescence, &c. When any of these exciting causes are present the disease may be followed by dangerous sequelæ, and probably by death. Rubeola nigra is dangerous when attended with extreme debility and nervous exhaustion; but as the dark colour may be present without this exhaustion, the disease is not universally fatal.

As a great proportion of the danger attending rubeola is attributable to the state of the lungs, the presence of any disorder of these organs is very unfavourable. Hence in the winter season measles are more to be apprehended than in the spring, and in the latter than during the warmer months of summer and autumn. In certain seasons, moreover, the general characters of the disease are more severe than in others, one epidemic being often universally mild, while another may be as generally violent. Young children are liable to be endangered by convulsions, particularly during the progress of dentition. Long-continued diarrhœa is also an unfavourable sequela, from the exhaustion which it entails upon the system.

The complication of measles by other diseases is another unfavourable indication. Rubeola has sometimes existed concurrently with small-pox, but a more frequent complication is that with hooping-cough or croup.

The symptoms of favourable portent in measles are composed sleep, gentle perspirations, and increased quantity of urine, with natural deposition.

TREATMENT.—When measles run their course mildly, the less they be interfered with by therapeutic aid the better. The "nimia medici diligentiâ" is to be apprehended; hence the importance of establishing a correct diagnosis, for the active treatment properly applied at the outbreak of other inflammatory diseases, would be injurious in this. It must constantly be borne in mind that the symptoms of measles are those of a poison acting on the system, and that misdirected attempts to cure may have the effect, by weakening the powers, of laying it more open to the influence of the specific virus. Our treatment must be expectant,—we must combat symptoms as they arise, and be vigilant. The indications to be fulfilled are threefold, *hygienic*, *dietetic*, and *therapeutic*. The hygienic management calls for the confinement of the patient to an apartment which shall be properly ventilated and of cool and equable temperature, for the quiet and repose of bed, and for the use of clean and light bedclothes. The dietetic management should consist of a simple unstimulating diet, such as milk, arrow-root, &c., in moderate quantity, to the entire exclusion of meat; subacid drinks to allay the

thirst, and mucilaginous fluids to diminish the cough.

As respects the therapeutic management, if the measles set in with considerable nausea, and with a sense of heat and weight at the præcordia, indicating the presence of irritating matters in the stomach, it is good practice to administer a mild emetic, for by this means you relieve the stomach of its oppressive load, and you prevent the prolonged irritation which these matters would occasion were they permitted to pass onwards into the intestinal canal. On the other hand, nothing can be more objectionable than to adopt the administration of an emetic at the commencement of measles as a general course of proceeding. This would be the abuse of the empirical method, such as we find it to exist in the domestic treatment of disease among the public. A patient may not need medicine, but he may need the watchful eye of the practitioner; and it cannot be too forcibly impressed on the mind, that that which is balm to A may be poison to B. Again, the emetic must be mild; it must not be of a nature to cause irritation of the mucous membrane; for the continuance of sickness that might result from such irritation, would prove to be a distressing and annoying feature of the case. Should sickness and retching prevail we must prescribe effervescent salines. Willan considered emetics to have the power of diminishing the catarrhal symptoms. I apprehend that if this be the case they must act by unloading the stomach, and removing the irritation which affects by extension the contiguous membrane of the air-passages.

When the febrile symptoms accompanying measles attain considerable height at the commencement of the disease, saline aperients and diaphoretics may be employed; but the use of strong purgatives should be avoided, lest an unmanageable diarrhœa be induced. Diarrhœa, it should be recollected, is a critical action, denoting resolution of the inflammation of the mucous membrane of the alimentary canal, and occurring at about the ninth or tenth day. The appearance of this symptom, therefore, is a salutary premonition of the close of the disorder, and when protracted may require to be admonished; but the greatest care is needed to avoid overstepping the bounds of prudence in this respect.

If the attack of rubeola be marked by hard cough and oppression of breathing, accompanied by pain in the chest, by those symptoms, indeed, which indicate inflammatory action in the lungs or pleuræ, you must have recourse to depletion. You must not, however, mistake the oppression of respiration, which is a natural symptom of the eruption of measles, as of other exanthemata, for pulmonary inflammation. The latter is always attended with a hard and distressing cough, which increases with time, while the oppression of eruption subsides spontaneously at the end of twenty-four hours.

In children and weakly persons depletion will be best effected by leeches applied to the chest, and cupping; but in adults venesection may be practised with advantage. It must be remarked, however, that the extent to which depleting treatment may be carried is very different in cities and large towns to that which may be pursued in the country. In the former, the nervous powers, ever in a state of excitement, are soon exhausted, while in the latter they may be strengthened by the same measures. Depletion should be aided by the application of counter-irritants to the surface, as a blister, tartar-emetic ointment, stimulating liniments, the use of the mustard foot-bath, &c.; and in cases where the pulmonary disorder is trifling these means will often suffice without the loss of blood. Ipecacuanha is a valuable medicine in inflammation of the mucous membrane of the respiratory apparatus, from its determination to the skin; the liquor ammoniæ acetatis is useful for the same purpose, but antimony is objectionable from its action on the lungs. Dr. Robert Williams remarks that antimony has a tendency to produce mortification of the substance of the lungs.

During the inflammatory periods of measles the use of opium is contraindicated; hyoscyamus, however, is not liable to the same objections; but after the cessation of active symptoms, both of these remedies form useful adjuncts to the therapeutic treatment.

Cold affusion has been recommended for rubeola, but has not met with general adoption. Its use is opposed by the tendency to pneumonic disease which exists in this fever, and also by the dangerous results which have sometimes followed exposure to cold. Willan mentions the case of a girl, nine years of age, in whom measles were suddenly repelled by cold. In her case violent fever ensued; the pulse became quick, small, and irregular; the tongue was furred but moist; the eyes were dull and heavy; the skin pale and livid; the extremities cold; she had slight cough, and her breathing was laborious and rattling. She lay in a state of coma, and when aroused was querulous and fretful. These symptoms continued for four days, and she died on the ninth. This case is sufficient to put you on your guard if you should feel inclined to make trial of affusion; but it must be admitted that Willan's is an extreme case, and the gradual reduction of temperature by long exposure to cold cannot be compared with the locally stimulant and generally sedative effect of affusion. When the skin is hot and dry much comfort is given to the patient by sponging the surface, particularly of the limbs, with cold water, or vinegar and water.

When the eruption of measles has been re-

pelled by any untoward cause, you are called upon to take steps to obtain its return to the surface. The most efficient means for this purpose are the warm bath containing mustard, or the application of a blister. The latter is particularly indicated in cases where retrocession is accompanied by inflammation of some internal organ, and the blister may be combined with the use of other stimulating means.

Rubeola nigra requires to be treated as a case of ordinary measles, watching for symptoms as they arise, and meeting the individual peculiarities which the case may present. When the alteration in the appearance of the eruption is attended with debility, tonics, and particularly acid tonics, will be found serviceable. Sponging the surface with warm vinegar and water is also an useful procedure.

The *sequelæ* of measles must be treated with reference to the special indications of the secondary disease, according to the general principles of medicine. The pulmonary affection, with hard cough and impeded respiration, will require depletion, respective of the strength of the patient; counter-irritants to the surface, salines and ipecacuanha internally. The pneumonia and pleurisy of measles are not, however, so clearly influenced by depletion as similar diseases proceeding from cold, and if you find your depletion to fail in the production of the expected relief you must be cautious of pushing it too far. By reducing the power of the patient you disarm the defences of nature against the extension of the morbid poison, and destroy his chances of recovery. Where respiration is impeded by swelling and œdema of the mucous membrane of the larynx, and suffocation is threatened, it may be necessary to perform tracheotomy.

Chronic conjunctivitis is to be combated by a blister to the nape of the neck or behind the ears, and the application of a weak stimulant to the local affection. The nitrate of silver is the most efficient remedy in these and similar cases, as it combines a sedative with a stimulant effect, and diminishes the irritation of the diseased membrane, while it restores the calibre of the capillary vessels. Sulphate of zinc, in weak solution, as an ordinary wash, is an useful adjuvant. The same kind of treatment with the preceding is applicable in cases of purulent discharge from the meatus auditorii; and in chronic cases a weak solution of the chloride of lime, injected twice daily, will effect the arrest of morbid secretion after all other remedies have failed.

Chronic inflammation of the mucous membrane of the mouth, producing aphthæ, superficial ulcerations, or enlargements of the tonsils, are relieved by astringent gargles, and by the application of the nitrate of silver, either pure or in solution, in proportion to the duration of the case. In children, who are incapable of using a gargle efficiently, the subborate of soda, in the form of a linctus, is generally employed. Ulcerations around the circumference of the mouth will usually yield to nitrate of silver.

When inflammation of the mucous membrane of the mouth extends to the salivary glands, and the latter show signs of inflammation, they may be prevented from suppurating by the application of a blister over their surface. The nitrate of silver is well adapted to raise a blister rapidly, and is therefore suited to the present purpose.

Chronic inflammation of the mucous membrane of the alimentary canal, indicated by a diarrhœa of long continuance, and occasioning much debility, is to be treated by counter-irritation to the surface of the abdomen and legs, and the use of mercury with chalk, or rhubarb and magnesia internally, followed by chalk mixture, and the ordinary measures for checking diarrhœa.

Enlargement of glands and other effects of local congestion are to be managed on the same general principles, counter-irritation externally, and such other therapeutic measures as the nature of the case may determine.

Measles necessarily leave behind them a certain degree of debility, and a susceptibility of the system to disease, which continues for some time. The lungs are especially sensitive after measles, and the first impulse to the formation of tubercle may be traced to this period. The consideration of the latter circumstance points to the necessity of using warm clothing and avoiding cold and damp states of the atmosphere during convalescence. We proceed in the next place to—

SCARLATINA, OR SCARLET FEVER.

Scarlet fever is an acute inflammation of the skin and mucous membranes, associated with fever of an infectious and contagious kind. It commences with fever, which invades at any period between the second and tenth day after exposure to infection or contagion. On the second day of the fever the efflorescence makes its appearance in the form of minute red points, intermingled with points of a somewhat larger size, and slightly raised above the surface.

The red points are aggregated in infinite numbers into patches of irregular size, or they form a continuous surface of a bright scarlet colour, which extends over the entire body. The rash declines on the sixth or seventh day from its eruption, and terminates by resolution and desquamation of the epidermis.

The degrees of severity exhibited by scarlatina constitute four principal differences of one typical affection, and are termed varieties; they are

Scarlatina simplex,
" anginosa,
" maligna,
" sine exanthemate.

SCARLATINA SIMPLEX.

Scarlatina simplex, the mildest and most benign form of scarlet fever, is characterised by absence of the severe inflammation of the fauces which accompanies the other forms of the disease. This deficiency of a prominent symptom has been made by Dr. Robert Williams the ground for alteration in the nomenclature of the disease, which he terms scarlatina sine anginâ. Scarlatina is announced by the series of febrile symptoms which I have already described in my portraiture of measles, namely, by general lassitude, languor, and drowsiness; by pains in the head, the back, and in the limbs; by rigors, succeeded by feverish heat; by restlessness, anxiety, sense of oppression, and an itching and tingling sensation and parching heat of the skin; by a quick, small pulse, and rapid respiration; by a dry cough, with redness and congestion of the mucous membrane of the mouth and fauces, and thirst; and by nausea and pain at the epigastrium. The tongue is studded all over with congested and elongated papillæ, which resemble rubies set upon a white ground, the edges and tip being red. The eyes are red and moist, but without coryza; the sense of smell is lost, and the whole face is swollen. All of these symptoms are increased towards night, and as the period of eruption approaches are much aggravated; the pulse at this time is rapid and feeble, and the oppression is oftentimes intense. Instances sometimes occur in which the depressing influence of the infecting poison upon the nervous system is so excessive as to overwhelm the patient at the outset of the disease, and occasion immediate death. Occasionally, on the other hand, the symptoms are much milder than here laid down, and scarcely exceed the sensations of a trifling and passing ailment.

On the second day the rash makes its eruption on the face, the neck, and breast, appearing in the first instance as minute dots, which by their numbers form patches of various magnitude; and the latter, by their coalescence, constituting a surface of continuous redness. On the third day the efflorescence extends to the whole of the trunk and to the upper extremities. It is on this day, also, that the congestion of the mucous membrane is most striking. On the fourth day the rash invades the lower extremities, and has reached its acmé. The eruption on each of these regions runs a course of three days, so that the decline, following the same order with its invasion, occurs during the fifth day on the face and neck; during the sixth on the upper extremities and trunk, and during the seventh on the lower parts of the body. During the eighth and ninth days the rash still further fades, the epidermis desquamates in furfuraceous scales around the joints; and on the rest of the surface, particularly the hands, peels off in laminæ of considerable size. Frank remarks that he has seen the hair and nails cast off in these exfoliations.

The appearance of the efflorescence presents some variety in its character, in different cases; in some, for instance, the surface is smooth and uniform, and affords ground for the designation assigned to it by Frank, *scarlatina plana vel levigata*; in other cases, certain of the papillæ, particularly of the abdomen, more congested than the rest, rise above the level of the surrounding surface, and assume a pimply aspect, which is rough and granular to the touch; this is the *scarlatina papulosa vel milliformis*; and, in a third and more rare series of cases, vesicles are developed which contain a serous fluid, the latter constituting the *scarlatina vesicularis vel phlyctænosa, vel pustulosa*. The redness presents some modifications, also, in relation to the period of the day and the part of the body affected; thus the vividness of colour is always greater in the evening than in the morning, and particularly on the evenings of the third and fourth days; it is vivid also about the loins, the nates, and the flexures of joints. On the face and limbs, again, it is more or less general in its expansion, while on the trunk of the body it occurs in patches. The patchlike character of the eruption is also seen at the close of the disease, when a kind of breaking up of the redness occurs, considerable spaces becoming paler in their hue, and assuming the appearance of the sound skin.

The efflorescence of scarlatina simplex on the face and on the hands is attended with more or less swelling, from painful œdema of the subcutaneous tissues. In the hands their intumescence interferes with the movements of the fingers, and on the face, obstructs the eyes, from swelling of the eyelids. The œdema of scarlet fever is more painful and dangerous than that which results from ordinary causes.

It sometimes happens that the decline of scarlet fever is the signal for a sudden renewal of the febrile symptoms and a temporary outbreak of the rash. The patient is always much debilitated at its close.

SCARLATINA ANGINOSA.

Scarlatina anginosa may be regarded as constituting the typical form of scarlet fever, being especially distinguished from the preceding by the early and serious inflammation of the fauces and pharynx by which it is accompanied, and which forms so prominent a feature in the disease. Dr. Robert Williams refers to this character in the name which he assigns to the present form of

affection, namely, scarlatina mitior, in contradistinction to scarlatina sine anginâ.

The premonitory symptoms of scarlatina anginosa are identical with those of scarlatina simplex, but more severe in their nature. The sense of oppression of the milder disease is augmented, as are the languor and restlessness; there is nausea with vomiting, and sometimes diarrhœa; the pulse is small, quick, feeble, and irregular; there is great pain in the head, faintness, and often delirium, these symptoms being accompanied by excessive heat of skin. The temperature of the surface in scarlatina anginosa rises sometimes as high as 104° or 105° of Fahrenheit; and Heberden remarks that he has seen the column of mercury in the thermometer rise to 112°; occasionally the premonitory symptoms are accompanied by hæmorrhage from one or other of the mucous membranes.

The fauces and pharynx often exhibit a deeper tinge of colour than natural previously to the occurrence of constitutional symptoms; but as soon as the latter are established the redness becomes intense, the mucous membrane is much swollen, producing constriction of the guttural passages and hoarseness of voice, and communicating a sense of extreme stiffness on the attempt being made to open the mouth, the stiffness being increased by the enlargement of the salivary and lymphatic glands. Respiration is more or less impeded, deglutition is difficult and painful, and a large quantity of viscous and tenacious mucus collects about the fauces. By the third or fourth day the tumefaction of the mucous membrane has still further increased, patches of false membrane are seen upon its surface, and ulcerations begin to be apparent. The tonsils are hard, and, with the uvula, are often so much swollen as to block up the passage of the fauces, and the whole of the mucous membrane of the mouth partakes of the inflammatory action. The tongue is coated with white mucus, upon which the congested and elongated papillæ lie like brilliant gems, strongly contrasting by their deep red hue with the white surface from which they rise.

The inflamed and tumefied mucous membrane is not long in falling into a state of ulceration, of which the effusion of adhesive lymph upon the surface in the form of patches of false membrane appears to be the precursor. The ulcers are denoted not only by an appearance of excavation, which is sometimes concealed completely or in part by the lymph which covers their surfaces, but also by a zone of vessels formed around each of the ulcerated spots. Ulceration, however, though not an infrequent is not a serious part of the disorder; it occurs usually in persons of irritable temperament and bad constitution; and the ulcers are not long in healing as the stages of the disease advance. Sometimes, indeed, the separation of the false membrane from the surface, and the granulation of the ulcer is protracted till the tenth or twentieth day, and even later, and convalescence is consequently retarded.

The cutaneous disorder is very much modified by the mucous severity of the inflammation; it is late in its eruption, not appearing until the third and sometimes the fourth day of the constitutional affection, and then being partial in its distribution and more intense in its redness. Occasionally it appears but to disappear as soon as it is developed; vanishing, and returning in a day or two, with the same partial characters. Willan records two instances in which the rash reappeared on the fourteenth day of the disease, seven or eight days after the primary eruption, and went again through the usual course, terminating in a fresh desquamation. Both of these cases were violent and one fatal. The same author calls to mind another case in which the eruption appeared a third time, at about the twentieth day of the disorder. The seat of greatest uniformity and vividness of the rash is the vicinity of joints, where some traces may usually be met with when wanting on the rest of the body. The cutaneous congestion in scarlatina anginosa lasts longer than in the preceding form, fading tardily, and being followed by less freedom of epidermic exfoliation.

The decline of the cutaneous eruption does not commence until the fifth or the sixth day, and at this period there is often some amelioration in the state of the throat. The disorder of the mucous membrane, however, still continues, and is prolonged for a fortnight or three weeks, the persistance of this local disorder being accompanied by mitigated constitutional symptoms. When convalescence is established the patient's powers are much prostrated, and considerable debility is left behind. Occasionally, however, one or more of the joints, as of the fingers or knee, becomes inflamed at the decline of the affection, and prolongs the disease to a still later period.

Antidotes for Arsenic. — M. Rognetta, in an answer to M. Orfila, addressed to the French Academy of Medicine, asserts, that the most efficacious remedies against the poisonous effects of arsenic are wine, brandy, warm drinks, opium, the application of heat, &c.; agents, as he says, which have a therapeutic action directly opposed to that of the poison, restoring instead of diminishing the powers of life. M. Rognetta's experiments, leading him to this opinion, were performed on a considerable number of horses; and he denies that the diuretic remedies, such as the nitrate of potass, carbonic acid gas, &c., recommended by Orfila, have any sanatory effect, or, indeed, that they will have the slightest action on the kidneys, in animals to which a large dose of arsenic has been administered.

CLINICAL LECTURE
ON
CANCER OF THE STOMACH,

DELIVERED AT KING'S COLLEGE HOSPITAL, OCTOBER 24, 1842,

BY R. B. TODD, M.D., F.R.S.,
Physician to the Hospital.

GENTLEMEN,—Two cases of cancer of the stomach having lately been examined after death in the hospital, I propose to make some observations upon them in to-day's lecture.

Cancer, affecting either extremity of the stomach, is one of the most formidable maladies we are called upon to treat. The physician cannot pretend to check it or to cure it by the intervention of art, when once it has taken root, but he can often alleviate his patient's sufferings, for a time, by a judicious management of diet, and by the administration of appropriate medicines.

The early symptoms of this disease and those of ordinary dyspepsia are so similar that it is of great importance we should study such cases of the former as present themselves, with a view to discover one or more characteristic signs. If medicine can ever be brought to exert a control over malignant disease it will only be when we have learned to detect it in its earliest stages, and when we can apply our remedies before the system has become thoroughly infected by it.

The history of our knowledge of cancerous growths affords a good example of how the simplification of knowledge always follows its extension and verification. Formerly, the great variety of malignant tumours described by various authors was a source of much difficulty and doubt to the practitioner, and often led to injurious consequences in practice. Now, we know that all those varieties of morbid formations, usually denominated scirrhus, encephaloid or brain-like tumour, fungus hæmatodes, hæmatoid cancer, medullary sarcoma, and all the subdivisions of them which the minute observation of various authors, at different times, has created, may be designated by one and the same ominous name, cancer, or carcinoma.

And this good result has proceeded from a more accurate knowledge of the intimate texture of cancerous deposits. It is one of the many benefits which microscopic observation has conferred and is conferring upon medicine. The microscope is not only teaching us the healthy structure and normal mode of development and nutrition of the various textures and organs, but it is pointing out, also, what happens when this development and this nutrition go astray, as they are but too apt to do under the influence of a great variety of causes.

It is in this way that we have come to gain the important knowledge of cancer to which I have alluded. It has been proved by the microscopic observations of Müller, Valentin, Gluge, and others, and I have often had occasion to observe the general accuracy of their investigations, that the intimate texture of all these growths which I have enumerated is essentially the same; that is to say, that it consists in a collection of nucleated cells, very similar to the primary cells of development, as discovered by Schleiden for the vegetable kingdom, and by Schwann for the animal kingdom; similar, too, to the cells which are met with in some of the adult tissues, as in cartilage, for example. These cells are held together by more or less of an intercellular substance.

It is true that some variety has been observed in the different forms of cancer as regards the shape and size of these cells, the quantity of their nuclear granules, and the nature of the intercellular substance. Thus, some of the cells are globular, and have very distinct nuclei; others, again, are ovoidal, and the component granules of their nuclei are scattered. In a third variety the cells are prolonged at one or more points into caudate processes, but still preserve the essential nucleated-cell character. And in that form of cancer which is called gelatiniform, or colloid, Müller describes the cells as of considerable size, and containing other cells within them, which, again, enclose others of a tertiary kind.

The correspondence in form and general characters of these cells with those of normal development is very remarkable; but it is not more wonderful that such growths as those of cancer should spring from cells similar to those of the healthy tissues, than that textures so unlike each other as muscle, fibrous tissue, or cartilage, should originate in cells between which no material differences can be detected.

It is very difficult, if not impossible, to account for the variety observed in carcinomatous growths, but it is not improbable it may be influenced by one or more of several causes. Such are, for instance, the manner in which the cells are developed, the rapidity of their growth, the nature of the texture in which they are developed, their relation to neighbouring parts, especially to capillary blood-vessels, and the amount and kind of compression to which they are subjected.

The growth of cancerous tumours is often very rapid. This rapidity seems more conspicuous in the softer than the harder varieties of the disease. It is sometimes retarded by the pressure of a fascia, but as soon as that has given way it springs forward with considerable rapidity.

Andral mentions a remarkable instance in which a cancerous tumour of the omentum grew to such a size as to fill the abdomen in five weeks from the commencement of the symptoms.

In one of the patients (Eaton), from whom the morbid specimens now on the table were taken, a considerable morbid growth, soft and fungoid, seemed to develop itself in little more than a fortnight before his death.

To what is this facility of growth attributable? It is owing to a generative power of the cells themselves, by which cells grow within cells, and to the development of new cytoblasts, or nuclei, in the blastema which is poured out by the blood-vessels. Around these, new cells are formed, which, like the others, enjoy the power of multiplying their kind.

We must not, however, regard these cells as distinct organisms, or as animal or vegetable parasites, any more than we can view in this light the primitive cells out of which muscle, nerve, &c., were formed. It is not improbable that a similar process, namely the development of cells, takes place in the ordinary growth and nutrition of the various organs and tissues of the body. Certain it is, however, that corpuscles which resemble the nuclei of cells have been found in most of the adult tissues; whether these are the remnants of old cells, or new ones about to be transformed, it is, at present, impossible to determine.

The effects of cancerous growths upon surrounding parts at first do not differ from those of ordinary tumours. Parts subjected to their pressure waste; muscles stretched over them become attenuated; fibrous tissues generally resist their pressure best, and for the longest time. They are very prone to form adhesions with neighbouring organs, and it is in great part to the existence of such adhesions, dragging and displacing the tumour, that we must attribute a great deal of the pain which patients suffer from such internal tumours. A patient in the hospital, some months ago, who had a cancerous tumour of the cæcum, used constantly to complain of a dragging pain from the region of the stomach towards the cæcum. After death it was found that a portion of the great omentum had attached itself in front of the tumour and formed a tight band passing from the stomach to it.

The pressure of a carcinomatous tumour may occasion sloughing and ulceration of soft parts lying over it, as is sometimes seen in cancer of the breast.

One of the most remarkable circumstances in the natural history of cancer is its tendency to soften, or to pass from the hard state—the close cancer—to the open or ulcerated condition. What is the cause of the softening of cancerous tumours? I am disposed to regard this softening as a state allied to that of inflammation affecting the tumour. When the cancerous tumours fall into this state the system of the patient begins to suffer more decidedly than before, and sometimes to such an extent as speedily to terminate his sufferings.

A case occurred in the hospital about two years ago which, besides affording instruction in other respects, shows that inflammation excited within a tumour may, at least, put on the same appearances as softening would present. A man, about seventy, much emaciated, was admitted for what was called chronic rheumatism of the loins, by which he was so much crippled as to be unable to walk. This man had a tumour in the supra-spinal fossa which was evidently beneath the fascia in that region. There was just enough sense of fluctuation communicated to the finger, in examining it, to excite a difference of opinion as to the presence or absence of fluid. It was proposed to decide the point in dispute by introducing the exploring needle into the tumour. Unfortunately, I yielded. It was ascertained not to be an abscess. Next day my patient presented all the appearance of a person suffering from some powerfully depressing influence: his countenance typhoid, tongue brown and dry, pulse small and rapid. In two days he died. The tumour was one of encephaloid cancer, very red from injected vessels, and much softened; it had quite the appearance as if it had been inflamed throughout. The lumbar glands were much enlarged and loaded with cancerous matter; they must have irritated the lumbar nerves, and given rise to the so-called rheumatic pains.

I have no doubt that the fatal event in this poor man's case was greatly accelerated by meddling with the tumour. The state in which he died resembled very much that induced in patients whose blood has suddenly become infected with pus; and it is very likely that some of the matter of the inflamed tumour may have found its way into the vessels opened by the needle, and have excited the serious symptoms which led to his death. The case will serve as a useful warning to you, not lightly to interfere with tumours of a doubtful nature in persons advanced in age.

The most serious, and, practically speaking, the most important feature of cancer, is its liability to occur in various parts of the body, in addition to the part primarily affected. Akin to this is its liability to *recur* in the same or in some distant place after it has been removed by the surgeon's knife. The following is a melancholy instance in illustration, but the records of surgery abound with similar ones:—A gentleman, well known to many of the students of King's College, the late Professor Don, a ruddy-complexioned, healthy-looking man, who always looked as if he were fresh from the country, about forty-two years of age, had a small cancerous tumour on the lower lip in October, 1840. This was removed by Mr. Bowman; the wound healed, and everything seemed to go on well. In the spring of 1841 glandular swellings appeared on the

right side of the neck, and a large tumour formed there, which soon became an extensive open cancer. At the end of the year he died, with the most frightful destruction of parts I ever witnessed, one side of the neck having been completely dissected by the ravages of the disease.

What is the origin of cancer? I think the recent investigations into the minute structure of cancerous tumours afford some clue to a satisfactory reply to this question. If the tissues are formed from cells, and nourished from cells, which are developed in a blastema poured out by their vessels, may it not be reasonably assumed that the cancer-cells may be produced from a morbid blastema, and that the primary tumour may be the result of some local aberration of nutrition. It is impossible to assign a satisfactory cause for this derangement of nutrition, but it seems certain that organs and parts subject to frequent excitement or irritation, as the breasts, the uterus, the penis, the lips, the pylorus, are often the seat of cancerous degeneration. The giving way of one or more blood-vessels may open a passage for some of these cancerous germs into the blood, which being carried to some other parts of the vascular system, and meeting with some local impediments, form the nuclei of new deposits. "Each cell," as Dr. Walshe has expressed it, "is *in itself the possible embryo of a tumour.*"*

According to this view, the blood is the vehicle for the dissemination of the cancer, not its source, as Cruveilhier and Dr. Carswell suppose; and the cause of the cancer is the local derangement of nutrition, which prevents the newly-developed nutritive cells from undergoing their normal transformations into the elementary parts of the various textures. Thus, in the liver, the cells, as they are developed, do not assume the normal characters of the hepatic epithelium, but are aggregated as a mass of cancer; and so in other organs or tissues.

The occurrence of masses of cancer in the veins, or within coagula, gave some support to the supposition that the cancerous matter was first formed in the blood. It is obvious, however, that the view which assigns a local origin to the cancer sufficiently explains this phenomenon, for the progress of the cancerous matter through the sanguiferous system may be arrested at various places. Cancerous matter is sometimes found plugging up the excretory ducts of glands, and it is sometimes found on the free surface of serous membranes; it is surely much more likely to be developed in these situations from local causes than from a taint in the blood. I shall now direct your attention to some particulars connected with

The Cases which have called forth these general Remarks.

Case 1.—The first case is that of William Mallett, ætat. 52, a confectioner. This patient was admitted in the summer, and remained some time in the hospital. He went out, expressing himself much relieved, but died a short time ago. With a feeling of gratitude very rarely met with, he gave directions before his death that I should be requested to examine his body.

He dated his symptoms two years back; they began with weakness of stomach and loss of appetite; pain in the left hypochondrium, aggravated by eating; and soon after he became subject to vomiting after his meals. The pain came on immediately after eating, and the vomiting followed it, and always brought relief to the pain. He suffered much from flatulence; had tenderness on pressure over the stomach; never had difficulty or pain in swallowing.

On one occasion, after having been much irritated by some occurrence, he vomited some florid blood. Five hours afterwards he threw up a large quantity of coffee-coloured liquid, of a fetid odour. This was, no doubt, altered blood, and is a kind of fluid frequently ejected from the stomach in cancerous cases.

This poor man soon learned to regulate his diet; he felt, as all patients labouring under organic disease of the stomach do, that he should be quite well if he could abstain from eating. He limited himself to a milk and farinaceous diet, in small quantities, chewed a little meat, but did not swallow it, and took about half a pint of ale in the day.

When he came into the hospital he was very much emaciated,—face thin and pale. His chief complaint was from pain after eating, and vomiting, which always brought relief. The pain experienced was peculiar. He said he felt *as if there were a wound in the stomach which was irritated by contact with food or drink.*

This circumstance led me to suspect the existence of an ulcer of the stomach, situate near the cardia, an opinion which was favoured by the pain and vomiting coming on *immediately* after taking food. In pyloric disease, uncomplicated with any affection of the cardia, the pain and vomiting do not generally occur until some time after taking food.

Some temporary relief to the pain and sickness was experienced in this case from hydrocyanic acid and trisnitrate of bismuth. We carefully examined the region of the pylorus, but no distinct fulness existed there. During his stay in the hospital he complained once or twice of some pain and dif-

* Chimney-sweeper's cancer is a remarkable example of the influence of local irritation in the production of disease. It is now extremely rare, owing to the improved state of the class of persons who were exposed to it.

ficulty in swallowing. The tongue was always clean.

The Inspection showed

that the principal disease consisted in a large cancerous mass, developed between the lesser curvature of the stomach and the liver, and extending a little in front of the vena cava inferior, which was compressed by it. The lesser curvature of the stomach, viewed from within, was almost entirely destroyed by ulcerated and softened cancer. Near the cardia there was a circular ulcer, with clean edges, as if cut with a knife, a very common character of ulcers of the stomach. Much cancerous matter was deposited around the inferior extremity of the œsophagus, which diminished its calibre considerably: the muscular coat of the œsophagus above this deposit was greatly hypertrophied. The pylorus was free from disease.

There were several cancerous tumours in the liver, in the gastro-hepatic omentum, near the head of the pancreas, and around the splenic vein.

The post-mortem appearances in this case abundantly accounted for the symptoms. The food swallowed must have, as the patient surmised, immediately come in contact with a sore surface, for the ulcer was immediately within the cardia, and close upon it was the open cancer of the lesser curvature. The absence of dysphagia, as a prominent symptom, seemed accounted for by the great increase of strength in the muscular coat, which became thereby able to overcome the obstacle, and partly by the patient's having very much habituated himself to taking liquid food and solids in small portions.

Case 2.—The second case is that of John Eaton, by trade a printer, ætat. 52, admitted July 25th, died on the 12th of October. For the last ten months he had been living badly; previously to that time he lived well, but temperately.

Six weeks before admission he began to suffer from pain and vomiting after meals. Some time generally elapsed after taking a meal before the pain came on, never less than half an hour, but sometimes, although very rarely, a few hours. The matter vomited had a brownish appearance, and fermented, as if mixed with yeast. Twice during his stay in the hospital he vomited blackish matter, like altered blood.

At first there was a little fulness in the region of the pylorus, and the pulsations of the aorta seemed more distinctly communicated than is natural; as emaciation progressed this became more distinct, and a short time before his death a large tumour distinctly appeared, both visible, and sensible to the touch. It was evident that there was obstruction at the pylorus, for after eating the stomach would become inflated, so that its shape could be distinctly seen, as it pushed the abdominal parietes before it. This tumour was round, somewhat nodulated, and on pressure conveyed distinctly the pulsations of the aorta.

The state of emaciation immediately preceding his death was extreme; face quite hippocratic, abdomen sunk and hollow.

A few days before death great tenderness all over the abdomen came on; he was affected with hiccup, and the vomiting was very troublesome. These symptoms we attributed to the supervention of peritonitis. Throughout his illness he frequently complained of epigastric pain, and latterly suffered much from a dragging pain in the region of the stomach.

In this case the diagnosis of cancer of the pylorus was easy and obvious; it was founded on the following circumstances: the progressive emaciation, the pain and vomiting supervening some time after taking food, the tumour gradually enlarging in the pyloric region, the flatulence and evident signs of an obstructed passage through the pylorus.

The Examination after Death

fully verified the diagnosis. There were marks of peritonitis in recently effused, very soft, and almost puriform lymph, poured out among the intestinal convolutions.

An adhesion of a portion of the omentum to the diaphragm very probably contributed to the dragging pain of which the patient used to complain.

There was a very large pyloric tumour, which had formed adhesions to all the surrounding parts; this surrounded the pylorus, and obstructed the passage of the contents of the stomach through it.

On opening the stomach a large, soft, fungoid, very vascular mass, was found to project into it at its lesser curvature, which reached from the pylorus to the cardia, but did not in any degree obstruct the latter orifice.

In this case the cancerous matter had been disseminated extensively. It was found in small, oval tumours, on each side of the thoracic surface of the diaphragm, in greater quantity on the left than on the right. The left lobe of the liver adhered to the anterior surface of the stomach, and at the adherent part cancer was deposited. Several cancerous tumours were formed in the neighbourhood of the pancreas, and were scattered over the intestines beneath the peritoneum. A considerable tumour adhered to the superior fundus of the bladder, but did not encroach upon its cavity.

The following is Dr. Graham's distinction between *plants* and *animals*:—"All organised beings have life; plants have life; animals (brute) have life and soul; man has life and soul, with immortality."—*Lectures on Botany at Edinburgh.*

LIEBIG,

HIS CHEMISTRY AND REVIEWERS.

BY

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No. V.

THE analysis of diet was the subject of my last paper. Respecting its preparation for use we meet with the following remark at page 138 of Liebig's work:—"Roasting and boiling alter in no way the composition of animal food." In a very interesting book on the subject of food lately published by Dr. Truman, the fact that

Cookery is really a branch of Organic Chemistry,

is put prominently forward. His remarks lead to the conclusion that the pleasure of the palate should not be the only, if, indeed, the primary, object had in view; but the wholesomeness or unwholesomeness of the various processes resorted to, should be inquired into, for which purpose the united talents of several good chemists are required. Nothing can be more just. Chemistry has effected much less than it is capable of accomplishing, not only in the analysis and the determination of the relative nutritive qualities of substances, but also in the discovery of the best methods of preparing them, both as regards health and economy.

The processes employed are mechanical and chemical, but the agency of heat is unquestionably the most important. Vegetable substances are frequently fermented, as in baking, where a quantity of decomposing gluten is kneaded with the gluten of flour so as to excite fermentation, this being afterwards suddenly stopped by a high temperature. During the fermentation a portion of the nutritive principles of the flour are dissipated. Substances composed chiefly of starch are rendered more easily digestible by boiling, "probably because the application of heat causes the grains of the fœculent mass to burst." Many vegetables possessed of deleterious properties when eaten raw, are rendered wholesome by the agency of heat, of which the tomato and common potato are instances. Wine, spirits, beer, and vinegar, are products of different species of fermentation and eremacausis, and the character of the fluid depends upon that of the ferment. The proportions of some of the proximate principles of animal matters are altered, and the state of others changed, by roasting, boiling. broiling, frying, and stewing. Thus, albumen is coagulated, particularly if a high temperature be employed, and food is in this way rendered firmer. The firmness of boiled fish is in a great measure in proportion to the hardness of the water, saline matter raising the boiling point; and fish is said to retain its flavour better by being boiled in sea-water. On the contrary, fibrin in most of the processes of cookery is softened; but in roasting, if carried too far, flesh becomes partially carbonised and hardened.* In roasting and broiling fatty and extractive matters are partially drained away. The observation of John Hunter that "boiled, roasted, and even putrid meat is more digestible than raw," is in the main correct, for the destruction of the vitality of food is essential to its digestibility, but then the process by which it is prepared should be regulated by correct principles, and in particular the temperature should be confined within a given range.

With these facts before us, the remark above quoted from Liebig is liable to misconception, if not taken with the context. He admits that a number of matters may be changed by the culinary art, but he gives three analyses from Bœckmann and Playfair of the roasted flesh of venison, beef, and veal, according to which it appears that the relative proportions of carbon, hydrogen, nitrogen, oxygen, and salts, is as nearly as possible identical with those of flesh in its raw state, and since the latter agrees very closely in composition with proteine and with blood, he infers that the essential nutritive principle proteine, is not altered during the process.

I have the following memorandum before me from the "Philosophical Magazine."

Beef loses by boiling	26.5	per cent.
——————roasting	32.	,,
——————baking	30.	,,
Legs of mutton by boiling	21.33	,,
Shoulders ——————roasting	31.33	,,
Loins ——————roasting	35.5	,,
Necks ——————roasting	32.33	,,

As these results were obtained by actual experiment, I have no reason to doubt that they are correct, but the inference has been drawn from them that the nutriment of meat is diminished in equivalent proportions, than which no greater mistake can be made, as shown by reference to the above analyses. The whole of the most essential nitrogenised principle, the proteine, remains unaltered in quantity or composition, after the employment of the processes in question. In roasting the greater part of the fat is drained away; in boiling gelatine, extractives, &c., are removed, each of which has some definite use when introduced into the economy as food; but the material which will be shown in a future paper to be nutrient in the highest degree and in the most especial manner, remains the same. Thus, the real merits of

* LANCET, 1839-40, vol. i., p. 270.

culinary processes can be determined on chemical principles only.

The important subject of Digestion

is the next to which I beg to call the attention of the readers of THE LANCET. The doctrine taught by the latest writers on physiology in this country is, that digestion consists essentially of a chemical solution of the aliment by the gastric juice.* This view of the case is supported mainly by the experiments of Dr. Beaumont, who found that the gastric juice obtained from the human stomach possesses the power of dissolving alimentary substances out of the body, and that the solution, although requiring rather a longer time for its completion, appears to constitute chyme as perfect as that formed during the natural process of digestion in the stomach. Some physiologists believe that this simple chemical solution is effected by a peculiar animal principle, to which the term pepsin has been applied, contained in the gastric juice; others refer it to the acids of that fluid, and in particular to its hydrochloric acid.

To be more explicit. The digestive principle, pepsin, has been obtained in a separate form from the glandular membrane of the stomach by Wasmann, although Dr. G. Bird disputes its existence, excepting as a modification of albumen. We were informed, in the first place, by the supporters of the theory of digestion by simple chemical solution, that pepsin, in combination with acids, that is to say, with acetic acid, and an addition of hydrochloric acid, has the power of dissolving coagulated albumen, this principle not being soluble in the acids alone at the temperature of the human body; but it was found that if to a solution of half a grain of acetate of pepsin, hydrochloric acid and white of egg be alternately added, 210 grains of the latter may be dissolved, from which it was ultimately inferred that the hydrochloric acid is the true solvent. The fact that hydrochloric acid alone dissolves white of egg when aided by ebullition, has also been brought to the support of the theory of simple solution, the pepsin being described as a substitute for caloric, and acting as a predisposing affinity, but not producing a change of matter in the substance acted upon.

Liebig likens digestion, on the contrary, to, or compares it with, fermentation. He states that the clear gastric juice contains a substance in a state of transformation,—in fact, a ferment; and that by the contact of this ferment with certain constituents of food which are previously insoluble in water, a new grouping of the atoms of their constituents takes place, by which they acquire the property of dissolving in that fluid. The ferment is a product of the transformation of the stomach itself.

In support of this statement Liebig remarks, that "no substances possess, in so high a degree as those arising from the progressive decomposition of the tissues containing gelatine or chondrine, the property of exciting a change in the arrangement of the elements of other compounds." That the lining membrane of the stomach of an animal thoroughly washed and brought immediately into contact with a solution of sugar, milk, and other substances, produces no effect whatever—no fermentation; but if the same membrane be exposed to the air, and then brought into contact with a solution of sugar, for instance, a fermentation is immediately excited; and the nature of the change produced depends upon the state of decomposition of the animal matter, the products being the usual products of fermentation, lactic acid, mannite, and mucilage, or alcohol and carbonic acid. An ordinary dried bladder, again, if exposed to air and moisture, becomes capable of exciting fermentation in a solution of sugar of milk, with the production of lactic acid. These examples are adduced for the purpose of illustrating the fact that molecular changes are excited very readily by the action of air and water upon these membranes, and that the animal matter thus brought into molecular action as readily produces the metamorphoses of organic compounds, but by no means for the purpose of establishing an identity between these actions and the changes which occur in food during the process of digestion.

According to the theory of fermentation the solid insoluble albumen of food is not dissolved in pepsin nor in hydrochloric acid; but it is dissolved in water; a transposition of its atoms, produced by a ferment, being the cause of its solubility, just as in germination, the presence of diastase (a body in a state of transformation), effects the solution of starch, that is, its conversion into sugar. This view of the conversion of albumen from a state of insolubility to a state of solubility, appears to me to explain and to be mutually explained by Dr. Prout's description of what he has termed incipient albumen.

In further support of the analogy which Liebig believes to exist between the digestion of substances in the stomach and processes of fermentation, he attempts to show that besides the gastric fluid, which it is admitted by all contains an animal matter, the oxygen of air conveyed into the stomach with the food plays an important part.

Liebig holds that during the mastication of food, atmospherical air is enclosed in the saliva in the shape of froth, and by that means introduced into the stomach. That the quantity of air thus ingested is in proportion to the quantity of saliva, and that rumination in certain animals has plainly for

* Carpenter's Principles of Human Physiology, par. 444-457.

its object a renewal and repetition of this introduction of air to aid the progress of digestion.

Of the air thus received by the stomach, it is the oxygen only which contributes to the action of the ferment and the metamorphoses which the food undergoes. Magendie examined the gases contained in the stomachs and intestines of criminals executed after taking food; when the execution occurred not longer than an hour after a meal, oxygen was found in the stomach; in two hours it had entirely disappeared, and a large quantity of nitrogen was found in the intestines with an entire absence of oxygen, from which the inference is clear that the oxygen of the air is separated from the nitrogen in the stomach, and that the former is employed during digestion in that organ.

The question will naturally arise, What becomes of the nitrogen thus set free in the alimentary canal? and the explanation given by Liebig is the more important as it bears upon some other subjects which, in a future paper, will come into review.

Liebig appeals to the phenomena of endosmose and exosmose. When graminivorous animals have their alimentary canals overloaded with fresh juicy vegetables, they become enormously distended with gases: these gases cannot escape by the œsophagus, yet they will all disappear in twenty-four hours. The permeability to gases of animal tissues, living as well as dead, is the only explanation which can be given of this fact. In wine countries persons sometimes die asphyxiated from drinking wine in a state of active fermentation, owing to the disengagement of carbonic acid in the alimentary canal, which gas permeates the parietes of the stomach and diaphragm, reaching the air-cells of the lungs, and displacing common air. All gases are urged towards the lungs in the process of respiration, owing to the partial vacuum produced. The proof that the carbonic acid reaches the lungs is, that the inhalation of ammonia (which combines with it), is recognised as the best antidote against this kind of poisoning; the carbonic acid gas of soda-water, champagne, &c., is given out through the skin and lungs, and this is equally true of the nitrogen, which is introduced into the stomach with the food in the saliva.—(P. 116.)

Let us not misapprehend our author upon this subject of paramount importance, the essential nature of the process of digestion. He believes that it is not a simple solution, but a species of fermentation. That a molecular action is produced by the agency of oxygen upon the animal matter separated from the stomach in the gastric juice, and that this molecular action is communicated to the insoluble albumen or proteine of the food, by which the latter is rendered soluble; at the same time he by no means regards this action as identical with any of the known processes of fermentation occurring in organic matters out of the body. He observes, that "there are numberless cases in which a complete chemical metamorphosis of the elements of a compound occurs without the smallest disengagement of gas, and it is chiefly these which must be borne in mind, if we would acquire a clear and accurate idea of the chemical notion or conception of the digestive process;" and he deprecates an involuntary recollection of the phenomena which accompany the fermentation of sugar and the putrefaction of animal substances in our reasonings upon the subject. As connected with Liebig's theory of digestion, I beg now to call attention to

Some most Important Facts connected with the Saliva,

and I propose to avail myself of the papers by Dr. Wright, of Birmingham, published in the volumes of THE LANCET for 1841-42, It may be stated at once that after a series of most patient researches Dr. Wright arrives at the conclusion, that "the fact of saliva changing the ultimate composition of one kind of food, and simply digesting or dissolving another, is a substantial argument in favour of the service of this secretion in ordinary digestion." The notion that saliva is chiefly of use in lubricating the passages and softening the food, now that the animal fluids have received more attention from physiologists of the day than for many years previously, is entirely exploded, and the essential nature of insalivation in the process of digestion has been proved by numerous facts and experiments.

We are, however, still very much in the dark respecting the molecular actions brought into play by the admixture of saliva with the food, and the changes which occur in different species of food during insalivation. Some of the most important observations are those of Montègre and Voisin; the former acidulated saliva with acetic acid, and by means of this artificial fluid succeeded in converting alimentary materials into a chymous pulp; the latter corroborated the result of this experiment; he found that saliva acidulated and kept at the temperature of the human body, would convert food in twenty-four or thirty-six hours into a greyish "perfectly homogeneous paste." Voisin also observed that food retained in the mouth and intimately mixed with the saliva, loses its original character, and becomes a greyish homogeneous pulp, very much like chyme, and that this is not a mere conversion into a soft mass, but that the organic principles experience a commencing metamorphosis. The important observation was also made by the same physiologist, that food, triturated and mixed with the saliva, when introduced into the small intestines of an animal, was, to all appearance, in two or three hours as completely

chymified as though the process had taken place in the stomach.*

These facts are important as establishing the essential nature of insalivation in the conversion of food into chyle and blood, but they leave us in the dark respecting the real nature of the changes which take place. The most important fact known is that of the transformation of starch into sugar. Leuchs first discovered this property of saliva. Schwann found the statement correct, and it has again been corroborated by Messrs. Marshall and Garrod; but the experiments most decisive of the nature of this change are those of Dr. Wright. From one drachm of starch, the latter obtained in twelve hours, at a temperature of 98°, by admixture with saliva, thirty-one grains of sugar. In most instances lactic acid, together with sugar, was produced by the action of saliva upon starch, and by performing the experiment in oxygen gas, a portion of this gas was absorbed, and a portion of carbonic acid gas liberated. When saliva was made to act upon starch under hydrogen or nitrogen gas, no sugar was formed, but a small portion of starch was converted into gum.

It will be seen by Table II. that the difference in the composition of starch and sugar is trifling. When this conversion takes place out of the body by means of ordinary chemical ferments, the weight of the sugar exceeds that of the starch, by the addition of the elements of water. Liebig's reasoning applies to the changes which take place during digestion in animal substances, and particularly in the compounds of proteine, but we here see that the only tangible fact we are cognisant of respecting the action of saliva on vegetable substances, favours the notion that a principle analogous to diastase, in the saliva, a true ferment, produces a metamorphosis; and it is established by Dr. Wright's experiments that the action of oxygen facilitates this, a circumstance which corroborates the view taken of the essential nature of these changes by Liebig, that the ferment must be in action.

The following are among the inferences drawn by Dr. Wright:—That the saliva has the power of modifying, and, to a certain extent, of digesting, vegetable and animal substances, but that it has a more powerful action on vegetable than on animal matters. The action of saliva on gluten is not productive of either gum or sugar, but gluten becomes sparingly soluble both in water and cold alcohol by the action of this fluid.

Dr. Wright states, however, that the healthy digestive action of saliva is always attended with the evolution of lactic acid, from which it might be inferred that lactic acid is necessary for the digestive process. Liebig, referring to the changes which take place in the stomach, but not to the action of the saliva, denies the formation of lactic acid in digestion. He remarks, that formerly chemists were unacquainted with the extraordinary facility and rapidity with which this acid is formed from a number of substances containing its elements, when in contact with animal matter. That there is no proof of the necessity of this acid in the digestive process, and that we know with certainty that in artificial digestion it is not formed. There does not appear to be a perfect accordance between the published opinions of Dr. Wright and Professor Liebig on this part of the subject, but I pass it over as not being directly applicable to the principal question before us.

I have referred to Dr. Wright's investigations respecting the action of saliva, because I think in the main they tend to confirm the doctrine maintained in Liebig's book, of digestion belonging to that class of molecular changes produced by organic atoms in action, to which the term fermentation is generally applied. The use of the expression "organic metamorphosis," or of "transformation," is more significant, and calculated to obviate some misconceptions. It should be remembered that, as shown in my third paper, even in the ordinary processes of fermentation, there is not one change, but a series of changes. This is very likely to be the case in some instances in the progress of food into the form of blood. The varieties in the proximate principles of food have also to be borne in mind, from which it would again follow that there is not one series only, but several series of changes, although the recent discoveries, by which it appears that the most essential nutritive constituents of both animal and vegetable food are formed on one common basis, being all compounds of proteine, much simplifies the case. Further, it is obvious that if this be the right view to take of the nature of animal digestion, one principle subject, which calls for the closest investigation, is the character and habits of the ferment or ferments, by the action of which the conversions of food are effected.

Several objections have been raised against this part of Liebig's Work.

It is said that if the *digestive process* be analogous to *fermentation*, "a small quantity of the gastric juice ought to be capable of effecting the digestion of an unlimited quantity of food."* Now, it is undoubtedly the fact, that if a large quantity of organic material be added to a small quantity of

* The experiments of Voisin are from notes made by me some years ago. His work was published in Paris, but I have been unable to obtain a sight of it for the present purpose. It was noticed in the "Medico-Chirurgical Review."

* Pereira, Pharmaceutical Journal, vol. ii. p. 194.

gastric juice, a portion only of the former will be changed, and all further action will cease until more gastric juice is added; but this fact only shows that the ferment does not reproduce itself.

In Paper III. it was explained that if the quantity of ferment be small in proportion to the fermentable material, a portion of this remains unfermented; if, on the contrary, the quantity of fermentable material be small in proportion to the ferment, a portion of the latter remains available. This, therefore, can by no means be received as a valid objection. Another objection is, that the animal matter of the gastric juice can be made to pass through chemical changes; it can be combined with acids, then again separated, and will still be capable of dissolving coagulated albumen. But it is impossible to admit that this is valid either, until we are better acquainted with the laws by which ferments are regulated. Dr. Pereira procured a digestive fluid from the fresh undried stomach of a calf, which is opposed to the statement of Liebig quoted above; but the doctor omits to inform us whether the essential condition of the experiment was attended to—the washing. I apprehend this experiment would go for nothing if the membrane were not thoroughly washed and carefully excluded from all contact with air before its fermentative qualities were put to the test. Many of the experiments performed by Dr. Beaumont, although extremely interesting, and suggesting the most important inquiries, are too imperfect, as observed by Dr. Wright and many other physiologists, to be thoroughly depended upon.

The Vital Force in Digestion.

If the question be asked, Is this theory of digestion perfectly satisfactory to my mind? I answer unequivocally that it is not. Much less so is the theory of simple chemical solution. Some of the positions require better proof, and the whole subject demands a more complete investigation: circumstances well known to Liebig himself, who has promised to publish a work upon food.—(Dedication, p. 7.) I can readily understand the manner in which organic atoms, when separated from the living structures, or deprived of the vital force which enabled them to resist external agencies, pass through successive changes in their progress from the more complicated to the more simple states in which they exist in inorganic nature, as happens in combustion, eremacausis, fermentation, and putrefaction. We here recognise a series of immutable laws in operation, with a definite final purpose. But in the absence of the most unequivocal proof, I have a difficulty in bringing myself to the belief that the changes which these same complex molecules undergo, the final purpose of which is the reconstruction of the organic cells, the recorporation of the living system, that these changes, even from their commencement in insalivation, are effected by the same force only, and by precisely the same laws as the changes in an opposite direction. Forming an opinion confessedly *à priori*, which is, of course, subject to correction by positive experimental proof of a sufficiently extended nature, I should rather expect that the molecular actions of the animal matters in the digestive fluids which excite the atomic metamorphoses, are frequently influenced, if not produced, by the vital force. This is one of those points respecting which, in the present state of science, it is difficult to say whether the phenomena are amenable to pure organic chemistry, or to the chemistry of organic life.

INFLUENCE OF SOME SALTS ON THE CIRCULATION.

Mr. Blake states that he found sulphate of zinc without the property of obstructing the arterial systemic circulation. But the bromide appears to be a more active corrosive than the sulphate. I take this opportunity of saying a word with regard to the influences on the pulmonic and systemic capillaries, and on the heart's irritability, ascribed to many salts by Mr. Blake, and employed by him as differential tests or criteria. Those salts which obstruct the circulation through the systemic capillaries are, I think, capable of producing the same effect on the pulmonic vessels, unless they have also the power of arresting the heart's action. Should they produce this effect on the heart, the velocity of the flow of blood towards the lung is soon diminished, and the circulation arrested before congestion of the lungs can occur. Thus, when we introduce substances that are capable of so affecting the heart, into the jugular, we find no congestion of the lung produced, but sudden cessation of the heart's action. And we may suppose that a dose of the salt which is large enough to congest the pulmonic capillaries, to be capable of stopping the motions of the heart, *i. e.*, where such a power is possessed. Moreover, I think that all irritants, and especially corrosive substances of the saline class, have more or less the power of obstructing the capillaries, when introduced so as to circulate directly to them. Dr. Cogswell found the heart of a dog, into whose jugular he had injected the iodide of zinc, gorged with blood, fluid in both ventricles, and red in the left; it was without motion when the chest was opened, but contracted on being irritated. — *Dr. Glover, on Bromine, Edin. Jour.*, Oct.

The albumen is generally more in the blood in disease than in health. The sum of extractive, saline, and fatty matter, is about the same in diseased as in healthy blood.—*Dr. Thomson of Edinburgh.*

Sir C. Bell recommended for tying arteries, a ligature composed of three threads, waxed and oiled.

FURTHER DEVELOPMENT OF A GENERAL LAW OF VITAL PERIODICITY;

BEING A SECOND CONTRIBUTION TO PROLEPTICS.

By Thomas Laycock, M.D., Physician to the Dispensary, York.

In a paper read before the British Association for the Advancement of Science at its last annual meeting, and published a few weeks ago in The Lancet (pp. 121 and 160 of this volume), I believe I very clearly exhibited the agency of a general law regulating the phenomena of life, and determining the periods of their appearance. I now propose to analyse this law more minutely, to seek for its relations, and resolve it into its elements; so far at least as existing science will permit.

I am quite aware that the undertaking is one of great difficulty, and that it has baffled some of the most acute of medical philosophers; but I indulge hopes of success because I enter on the investigation by a new method,—new, I mean, to the subject. No one can seriously consider natural and physiological phenomena without inferring that every series has its periods; nor can the mind contemplate its own fundamental and intuitive ideas without arriving at the same conclusion. As everything finite must have a period within which its existence is circumscribed, so every period so circumscribing the finite, being a measure of time, must be divisible into lesser periods. But it has always been found easier to reason from generals to particulars than to ascend from particulars to generals, especially in questions involving the phenomena of life; since the number, nature, and complexity of these render the observation of them most difficult and tedious. Now, the mere contemplation of abstract ideas never yet led to real knowledge in the mixed sciences, even when the phenomena to be explained were few and comparatively uncomplicated, so that it can be no matter of surprise if, in so complicated a science as physiology, this method has utterly failed, or only led to useless speculation.

These observations must suffice as my apology for dwelling less upon the principles and more upon the facts of periodicity, than they who have speculated before me, and also for my descending at once to particular facts. The complete day of twenty-four hours is the pathological period most generally noticed by physicians; but as in my previous paper I showed that there were periods of three days and a half, or seven half-days, I shall commence my investigation with this half-day period. This is, in fact, reverting to the ancient division of the whole day, or *νυχθήμερον* into two parts. I think that this half-day period may be further divided, but at all events we must start with it as being the unit which will comprise the phenomena of the best marked class of periodic diseases, the intermittents. Dr. Graves is, I believe, the only physician who has made this observation, and applied it to pathology. He observes, that if this period were adopted, "we should not count three days and a half, but seven half-days; we would not say seven days, but fourteen half-days. If this method were adopted, many of the apparently anomalous critical effects and critical terminations in continued fevers would, I have no doubt, be found strictly conformable to some regular law of periodicity."

Agues are named from the period intervening between the accession of the paroxysms, which period is termed the interval,—the time elapsing between the termination of one paroxysm and the commencement of the next being the intermission. Now, as the semi-tertian has two paroxysms on one day with one on the next, it is obvious that the period of twenty-four hours is not applicable to it, and that it may as properly be considered a semi-bi-quotidian as a semi-tertian. The ague which indicates that even the period of twelve hours is further divisible, is the triple quartan, in which there are three paroxysms on every fourth day. As this, however, may be considered a modification of the diurnal period, I shall not dwell upon it. The great divisions, then, of ague and their intervals, will be as follows:—The bi-quotidian with an interval of one half-day; the quotidian, two half-days; the tertian, four; the quartan, six; a doubled tertian, with accession on two successive half-days, and an intermission of two half-days; a doubled quartan, having paroxysms on two successive half-days, and an intermission of four half-days. So that the variously named agues may be considered as combinations of this half-day type, modified by the varying circumstances occurring in each particular case. Indeed, they may be compared with those chemical compounds which differ only in the relative weight of their constituent elements.

In inquiring into the causes of these revolutions and into the circumstances which modify them, we must remember that they are based upon the healthy or natural revolutions of the system; and a moment's consideration will assure us that these latter may be connected either with cyclical processes inherent in the system (esoteric), or dependent upon periodic agencies acting from without (exoteric), or result from a combination of the two (endexoteric). The most important alternation proper to the system is that of activity and repose. During sleep the nervous system undergoes a remarkable functional change, the brain and

nerves being more or less paralysed (physiologically) as the sleep is more or less profound: for practical purposes the period of repose or sleep may be defined generally as extending from ten or eleven o'clock, p.m., to four or five, a.m., the maximum period or time of greatest intensity of change being about two o'clock, a.m.; and I would here remark, that there is a numerous class of affections of the nervous system, which I have elsewhere termed *neuræmic*, resembling sleep in this, that they are dependent upon some temporary change in the functions of the brain itself, apparently connected with a disturbance of the capillary circulation in that organ, or, perhaps, with some passing change in the composition of the blood, but, like sleep, certainly unconnected with any appreciable alteration in the structure of the brain. Many, if not all, affections of this class are periodic; and it is obvious that these, as well as all other diseases primarily dependent upon morbid functional derangement of the nervous system, are most likely to appear when the natural functional derangement is greatest; that is to say, about two o'clock in the morning, when sleep is most profound.

Probably connected with this periodic change in the nervous system are the equally periodic changes in the functions of the heart, lungs, &c., observed by physiologists to occur diurnally. Dr. Prout found the consumption of oxygen gas in respiration to vary during the day as follows:—The maximum consumption is from eleven o'clock, a.m., to one o'clock, p.m.; it then gradually decreases to a minimum about half-past eight, p.m., at which point it is stationary until half-past three o'clock, a.m. The amount then suddenly increases, at first slowly, to its maximum, about noon; and from this point it almost immediately begins to sink, at first quickly, to its minimum, at half-past eight, p.m. Dr. Prout conceives that these variations are regulated by the presence or absence of the sun. The circulation has also its regular periods of change. So long ago as 1815, Mr. Knox inferred, from a series of observations, that during the morning the mere change from the horizontal to the erect posture renders the pulse more frequent by about fifteen or twenty beats. At mid-day the increase is about ten, and in the evening four or six. Mr. Knox some years subsequently confirmed these results, and showed that the diurnal revolution, both as to numbers and excitability, is altogether independent of food or exercise. More recently Dr. Guy has come to almost similar conclusions. According to his experiments, "the effect of change of posture is greatest in the forenoon, and least in the afternoon, the effect in the evening being the mean between the other two; and the effect produced by change of posture on the same frequency of the pulse in the afternoon, forenoon, and evening, respectively, is as the numbers eight, nine, and ten." Dr. Guy states that the observations of Nick, published at Tubingen in 1828, are equally corroborative of Mr. Knox's views. But Mr. Knox also showed, in his earliest paper, that the powers of the system generally are greater in the morning than in the evening; and a striking corroboration of this is afforded by an entry in Sir Walter Scott's diary. Sir Walter states, that when he was a young man he was able to lift a smith's anvil with one hand by what is called the horn; but he says he could only do it before breakfast. In the same entry he makes the remark, that his mental powers were always most vigorous in a morning. These facts lead us to expect that in the morning those symptoms dependent upon a sthenic state of the system will be developed, and those connected with an asthenic state will disappear. We can thus explain how it is that sleep is usually obtained towards morning in chronic asthenic disease. A special illustration of the general fact elucidated by Mr. Knox is given by that gentleman in the case of a child suffering from the *morbus cæruleus*, in whom the morning acceleration of the pulse induced violent paroxysms of dyspnœa during the early part of the day. The tendency to them gradually diminished, until five o'clock, p.m., from which hour she generally continued well until bedtime.

A diurnally periodic state of excitement of the system generally has been observed, but particularly in the insane, as *à priori*, might be anticipated. Dr. Allen made observations regarding this point on the insane patients under his care. He divides the day into thirty parts of forty-eight seconds each; these are distributed over four periods, which are each divided into three parts. The first period of increased excitement is from four to half-past nine o'clock in the morning, and the second period is from four to half-past nine in the evening. The periods of diminished excitement extend from half-past nine, a.m., to four, p.m., and from half-past nine, p.m., to four, a.m., the hours corresponding very closely with Dr. Prout's observations. It is obvious that these changes in the nervous, respiratory, and circulatory systems must necessarily influence in some degree the times of accession of all diseases, but particularly of the paroxysms of intermittents. It may be readily supposed, also, that a paroxysm of the latter occurring in the morning will be longer than a paroxysm occurring at noon, or in the evening; and this is the observed fact, for the paroxysm of a quotidian ague, which usually commences at four o'clock in the morning, is the longest of all the intermittents; while that of a quartan commencing at four, p.m., is the shortest.

These quotidian movements cannot, of course be isolated from the other changes in

the system which occur at longer periods; the cycles of agues will furnish us with the connecting link. I have already demonstrated that, to a certain extent, these are regulated by days or weeks; and as they consist apparently in alternations of increased or diminished excitement,—of sthenia or asthenia (these being, of course, relative terms)—they may be assumed to be analogous to the quotidian movements. It is obvious, from the numerous facts I have detailed in my previous essay, that the succession of these changes is esoteric, that is to say, they go on to a great extent independently of external periodic influences. In proof of this I need only refer to the unbroken succession of phases through which insects pass in their evolution from the ovum to the imago. A further corroboration of the general fact would be afforded if we could take two individuals whose conception dates from the same moment, and placing them under similar circumstances, watch the occurrence and recurrence of each successive cycle of change, and its accompanying phenomena. If the principle of periodic internal or esoperiodic revolutions be correct, the cycles of the two individuals would be coincident. This exact similarity of circumstances can rarely be met with, since even in the case of twins we cannot be certain that the conception of both dates from the same moment, and that consequently the vital cycles are contemporaneous. An instance of this kind has, however, been recorded, and is worthy of notice, because it was related at the time as a remarkable and inexplicable case. It will be seen at once that the inexplicable coincidences are perfectly in accordance with the principle I have laid down. The instance alluded to was communicated in 1834 to the Royal Academy of Medicine by M. Cagentre, as a singular instance of morbid sympathy between twin brothers. It is stated that whatever indisposition the one suffered, the other suffered at the same time. Derangements of the alimentary canal, intestinal worms, &c., always made their appearance in both precisely at the same moment, and the symptoms in both were of equal intensity. Dr. Nourel carefully watched the twins after their return from a fifteen-month's stay in the country, and verified the observations of their nurses. He found that quotidian intermittent fever commenced and finished on the same day in both; both had acute conjunctivitis together, and also colic, which lasted in each for twenty-four hours; two molar teeth in each made their appearance at the same time. These things happened in 1831. In 1832 they had different eruptions, but both suffered contemporaneously; in winter both had bronchitis together. In 1833 they were attacked with measles, and after these with scarlet fever; in these diseases each twin had symptoms precisely similar to the other, and the commencement and termination in both were exactly at the same periods. In 1834 they had ear-ach and intermitting fever together, and also a vesicular eruption on the back of the neck. Their dispositions were entirely opposite; one was thin and lively; the other robust and indolent.

Although opportunities of this kind, for verifying the general law, may be rare, there would be no difficulty in tracing its influence in large families living together; for if the cycles of the individuals may not be coincident, they would still have a fixed relation to each other, in virtue of the common origin of the members of the family from the same parent.

Phenomena reducible to the same general law may be observed occasionally in the course of agues; and phenomena usually considered anomalous, or, in other words, inexplicable by the current medical theories of the day. Of this kind is a case of ague related by Stoll. A monk had a quotidian ague, the paroxysms coming on at noon; it ended in three weeks. In four days, however, it returned as a tertian, the paroxysms coming on about four, p.m. This continued three weeks, and was cured. In eight days after a quartan appeared, the paroxysm occurring in the evening, and continued for fourteen days; but on every fourth day, for fourteen days more, there was a sense of coldness ascending from the feet. The liver and spleen began to swell at the end of the last-mentioned period, but in a week they returned to their normal state. In the spring of 1839 my friend, Mr. Thurnam, of the Retreat, very kindly communicated to me the particulars of a case resembling this in the interruption of its periods. It is very interesting as well from the long time over which the observations extended, as from the very great exactness with which those observations were made. The patient was a female, aged 58, and had been an inmate of the Retreat for fourteen years. During the five years ending autumn, 1838, she had periods of depression and excitement, observing alternate days exactly. In autumn, 1838, however, this regular tertian alternation was broken, and the high and low state recurred at other intervals, apparently irregular, and so continued until February following, when the old tertian type again appeared. Mr. Thurnam was so obliging as to extract the dates of this period from the register of the institution, and place them at my disposal. On analysing them I found that the disease had put on the unusual form of a semi-quartan; that is to say, the high and low states recurred at alternate tertian and quartan intervals; there were also breaks in the series at intervals. These statements will be best understood by placing two or three weeks in a tabular form.

Date, 1829.	State of Patient.	Type of Alternation.
Jan. 1	High	
" 2	Low	Quartan.
" 3	Low	
" 4	High	
" 5	Low	Tertian.
" 6	High	
" 7	Low	Quartan.
" 8	Low	
" 9	High	
" 10	Low	Quartan.
" 11	Low	
" 12	High	
" 13	Low	Tertian.
" 14	High	
" 15	Low	
" 16	Low	Quartan.
" 17	High	

It will be seen that the series of alternate tertian and quartan excitement was broken on the 11th January; the patient being low, when, if the usual recurrence had taken place, she would have been high. The whole period over which the alternation extended was sixteen weeks, and during that time there were eight breaks or interruptions, including the first. On October 22nd the patient was high, and, on the 23rd, low, as usual; but on the 24th, instead of being high, she was rather low; and, again, on the 25th was low; so that the first break was on the 24th October. The second was not recorded, no observations having been made during Mr. Thurnam's absence for four days in November, but it must have taken place on the 9th or 10th of that month. On the 3rd December a break took place, the patient being high instead of low; and, again, on the 21st, when she was low instead of high; and again, on the 29th, when she was high instead of low. On the 11th January she is low instead of high; on the 31st high instead of low; and, lastly, on 14th February, the old regular tertian type began to appear again unbroken. The intervals between these dates may be easily made out; they are (counting from February to October) as follows:—Two weeks; three weeks; two weeks; eight days; eighteen days; twenty-four days; sixteen days. But the day in November on which the break took place was not exactly observed, so that we must take the longer period, and this is from October 24th to December 3rd, exactly five weeks. From December 3rd to 21st is two weeks and a half plus half a day; and from December 21st to January 11th is three weeks, a period which includes the lesser period of eight days. The two days, then, which do not harmonise with the others are the supposed 9th or 10th November, and the 29th of December, and it is worthy of notice that between these irregular dates there is an exact period of seven weeks, so that it is probable that as there was a double series of diurnal changes, so there was a double series of hebdomadal, the points of junction being the 10th November, the 29th December, and 14th February, the intervening periods being seven weeks. This case, although imperfect in several points, illustrates well the involution of the semidiurnal cycle into the diurnal, and of both into the hebdomadal; and we can scarcely come to any other conclusion than that the hebdomadal cycle will present similar combinations of its simple multiple. As the quartan, a week of half-days, passes into a week of seven days, by duplication of the period, so a week may be doubled, and there may be bi-hebdomadal periods, or the bi-hebdomadal be doubled into the monthly; or hebdomadal and bi-hebdomadal periods may alternate like the tertian and quartan periods in the case just analysed. An illustration of each of the simpler multiples must suffice to confirm these inferences. A septiman ague will show the hebdomadal cycle. The government of Kasan is flooded by the Wolga as Egypt is by the Nile. A writer in the "United Service Journal" for Jan., 1833, observes, that the water left stagnant in the low grounds becomes putrid, and generates malignant fevers in July and August. "The government of Ufa particularly, is visited about that time by an intermittent fever, which attacks the patient every seventh day only, but it is so violent that it generally proves fatal." In one of his clinical lectures Dr. Seymour mentions, amongst other intermittent affections, the case of a woman who would be in high mania for a fortnight, and then in low mania for a fortnight, her disease presenting, in fact, the simple bi-hebdomadal type. Mr. Swift, of Dublin, has recorded the following illustration of the monthly cycle, which I quote in preference to many others, because the patient being a boy, aged fourteen, the periods observed in adults, and especially in females, could have no influence. This patient was constitutionally subject to asthma, until the time his symptoms were noted by Mr. Swift. At that time the asthma had disappeared, and periodical attacks of cerebral irritation as indicated by hysterical laughter, delirium, strong action of the carotid arteries, &c., supervened. There were altogether four of these attacks, as follows:—

The first began....2nd June, 1831.
The second .....30th June.
Interval.....28 days.
The third .....29th July.
Interval.....29 days.
The fourth.....26th or 27th August.
Interval.....28 or 29 days.

Mr. Swift seems to think that lunar influence might have something to do in defining these periods, but we have no data afforded respecting the phases or position of the moon at the above dates, which ought to have been given.

I might have here reviewed the laws of

habit and of hereditariness in connection with esoteric periodicity, but the foregoing facts will, I think, sufficiently exhibit the general principle that there are greater and less cycles of movements going on in the system, involving each other, and closely connected with the organisation of the individual; and that we must seek for their causes and relations inferentially and inductively. If, for example, we would commence with their first revolutions we inferentially (indeed, necessarily so) go as far back at least as the moment of conception; but I feel confident we must pass through the germ to the parents, and even to the grandparents, to get at a thorough knowledge of them. These, however, are El Dorado fields of research at present, and time would be but wasted in seeking for their treasures. I shall, therefore, inquire next into the agencies which influence the system periodically from without, and how the phenomena of these exoteric cycles modify and combine with those of the esoteric. This inquiry will involve all atmospheric and meteorological phenomena, and, of course, the curious question of lunar influence. From these it will extend to the influence of the seasons, and in considering these in their annual cycle, it will be necessary to revert to the larger esote ic cycles, and review the facts and opinions connected with the septennial phases of life. Thus, the sure and steady course of proleptical science will be from particulars to generals, and if its foundations be firmly established on severe induction, we may hope at some future day to extend its principles to the cycles of the seasons, and comprise within its sphere not only individual men and women, but societies generally, and even the whole human race. The axiom that the whole is equal to the sum of all its parts is universally true, whatever the whole may be; and there is really no reason for despairing that we shall ever attain to a knowledge of the whole alluded to (a knowledge which must necessarily be derived from the knowledge of its parts), because those parts are microscopically small to the intellect. The boundaries of astronomical science have been pushed from small and obscure beginnings into the infinite in space, time, and number; and who can tell but that Providence may so assist the humble inquirer into nature that science shall be extended to the infinite in littleness? And so, ultimately, man be able to look down, by the light of philosophy, upon the varied phenomena of terrestial life,—their multifarious combinations and complexities, their cycles and epicycles,—as he looks into the planetary world, and see nothing but order and simplicity where now there appears inextricable confusion. Assuredly the direction of this summit of clear perception is obvious. The road to it only wants hewing and digging, and diligently, working at.

CASES OF, AND OBSERVATIONS UPON,

PARALYSIS,

SYMPTOMATIC OF DERANGEMENT OF

THE GANGLIONIC OR SYMPATHETIC SYSTEM.

By Wm. Watts, M.D., Nottingham.

Case 1.— Oct. 1834. J. D., a young female, ætat. 20; convalescent a week from a severe attack of pleuritis, in which venesection had been freely practised; complains that she has lost all sensation in the ring and little-fingers of the right hand, which also feel a little stiff. Stimulants were administered, and in a few days she entirely regained the full use of her fingers.

Case 2.—Mrs. R., ætat. 30, of a highly hysterical disposition, had been confined three weeks, when I was called to her one evening, and found her in a violent hysterical paroxysm, accompanied with total loss of sensation in the ring and little-fingers of left hand, the power of motion in them remaining entire. In a few hours sensation returned, nor has it left her since.

Case 3.—S. M., ætat. 17, a young girl, tall, and large framed, chlorotic, of a sedentary occupation, and having a sister semi-idiotic, applied to me March 3rd, 1837, complaining of stiffness in, and perfect insensibility of, the index-finger of the right hand. She states that when nine years old she one day experienced a prickling in the ring-finger of the left hand, which continued for a few hours, when she lost all sensation in it. Four or five days passed before she could feel with it; then she experienced a tingling along the course of the ulnar nerve, as high as the elbow, which continued for four or five days more, and then left her. During the past eight years she has had at least a dozen attacks of a similar character, each enduring a few days, and all, with the exception of the three last, affecting the ring-finger of the left hand. In these three the index-finger of the right hand has been affected, and there has been a tingling sensation up the course of the radial nerve, as high as the axilla. She has at present globus and horrid dreams; the bowels are constipated; tongue pale, slightly furred; catamenia scanty, pale-coloured, but perfectly regular; countenance very pale. She was purged freely; the stools, very dark and offensive for a few days, then became natural; and the sensation returned to the finger. Aloetics and chalybeates were given, and as the general health improved she gradually ceased to have any further attacks.

Case 4.—(Communicated by a friend.) In a case of midwifery, on the third day, the lady complained of complete loss of sensation in the thigh, leg, and foot of the left side; the bowels had not been moved; lochia natural; the milk was being nicely secreted.

An aperient was prescribed and taken, and on the day following sensation gradually returned.

Case 5.—July 24, 1837. Thomas Biddle, ætat. 38, night-watchman, came under my care for an incised wound of the upper lip, obtained in an election fight. He had been on duty as a police-officer and night-watch from ten o'clock, p.m., Sunday, till three, p.m., on Tuesday, having had only one hour's rest meanwhile, and was very much exhausted. My attention was at first drawn merely to the wound in the lip; but on the fourth day (July 27th) he mentioned that he had had for some time a general numbness over the whole body, and at times a slight tingling in the upper extremities and in the thighs. He states that during the past winter he had but very poor and insufficient food, suffered thrice from the influenza, and was left in an extremely debilitated state. Before the influenza he was robust, and had always enjoyed the best of health. He now complains of an almost total want of sensation in every part of his body, experiencing no pain when pinched severely on the face, arms, breast, or thighs; so complete is this loss of sensation, that when he takes up his staff he can *scarcely* feel it, nor can he grasp it firmly. Has great numbness in the thumb and two first fingers of the right hand; a tingling and pricking when pressure is made upon the palm of the left hand, extending along the course of the radial nerve to the axilla, thence to the pectoral muscles. Has severe lancinating pain in the left hypochondrium and the epigastrium; a severe though inconstant pain in the upper part of the lumbar region; palpitation of the heart on the least mental or bodily excitement, which is worse when it springs from the former than from the latter. Has tightness across the chest when hurrying. His sleep is much disturbed by dreams, in which he fancies himself continually falling, or is in some imminent danger. On awaking he feels benumbed and cold, and huddling on his clothes he hastens at once to the fire for warmth, but which he scarcely ever derives from it. Is warmer after he has eaten or drunk. Warm drinks cause a copious secretion of flatus. Has difficulty in passing water at times (there is no obstruction in the canal), and sometimes his urine scalds slightly; it is usually limpid and copious, at times scanty and turbid, depositing a sediment. The scleroticæ are bluish-white, and he has frequent inclination to weep; tongue furred, pale, tremulous; pulse 56, very feeble; bowels said to be regular.—℞ *Sesquicarbonate of ammonia*, 3ss; *bicarbon. of soda*, 3ij; *comp. tinct. rhubarb*, 3vj; *spirit of nitrous ether*, 3iij; *comp. inf. of gent.*, ℥v. Make a mixture. One ounce every three hours. To have meat diet, as much as he can obtain.

28. Bowels have not been moved; tongue furred; mouth clammy; micturition easier. —℞ *Purging medicine*, ℥vj. A fourth part every three hours.—℞ *Sesquicarb. of ammonia*, 3ss; *comp. tinct. of cardamoms*, 3iv; *comp. infus. of gentian*, ℥vss. Mix. One ounce every third hour.

29. Tongue cleaner; spirits better; feels lighter and more comfortable; has been well purged; motions dark; complains of waterbrash.—℞ *Oxide of bismuth*, ℥j; *compound cinnamon powder*, 3ss; *sulph. of zinc*, gr. ij. Mix. Divide into six powders. Take one every fourth hour. Repeat the stimulant mixture.

30. Feels much better in all respects; is not now so cold or insensible to warmth; can feel the slightest touch upon any part; pressure on the hand is not productive of tingling; urine becoming a natural colour, and less copious, no ardor; no pain in hypochondrium or lumbar region; the waterbrash has ceased; has slight gnawing pains at the epigastrium; tongue clean, but pale; pulse 60, stronger, though still wanting power; bowels costive.—*Purgative pills*, ij, h. s. sd. Repeat the mixture and powder. The dose of zinc was gradually increased by half a grain each day.

Aug. 1. Bowels continue costive; motions dark; tongue furred slightly; is a little thirsty.—℞ *Purging mixture*, one ounce and a half every third hour.

2. Bowels moved four or five times copiously; motions dark and fetid; feels very low; pulse 60; tongue cleaner; sensation continues to improve.—℞ *Decoct. of bark*, ℥vss; *compound decoct. of aloes*, ℥iss. Mix. One ounce every three hours. Repeat the stomachic powder.

4. Much gnawing pain in the epigastrium. —℞ *Sulph. of zinc*, 3ss; *water*, ℥j. Make an emetic draught, to be taken immediately.

5. Was vomited and purged by the draught; the epigastric pain has ceased; has slight pain in epigastrium on pressure, was so much lowered by the action of the emetic as to have some slight return of the numbness, which, however, has disappeared to-day.—℞ *Sulphate of quinine*, ℈j; *dilute sulphuric acid*, 3ss; *decoct. of bark*, ℥vj. Mix. Take one ounce every fourth hour. Continue the powder. To have malt liquor.

6. Is perfectly free from pain in epigastrium; tongue clean; pulse 60, stronger; complexion improving; countenance cheerful; appetite good; sensation perfectly restored; goes on duty again to-night for the first time.

9. Continues to improve in health.

Discharged cured.

Sept. 1841. I have just seen Biddle, and find that having had money left him he enjoyed excellent health while it lasted, but having been unfortunate, and fallen again into poverty, he has had one or two similar attacks to the above.

Case 6.—John Dally, ætat. 41, a glove-hand of a pale sallow complexion, has, for a year, been in very distressed circumstances; during the last six months his food has consisted of water-porridge and potatoes, with occasionally a few herrings. States that he has not tasted meat for some time past. For more than a month he has been troubled with horrible dreams, accompanied by a sense of falling, as if he were sinking through the bed, indistinctness of vision, tinnitus aurium, vertigo, globus hystericus, and constant inclination to lachrymation. Has not been able to keep himself warm; is constantly drowsy, and his spirits are either extremely elevated or depressed. On the morning of Sept. 22, 1838, on attempting to rise, he found he had lost all sensation on the left side of his body, and he fell to the ground. Oct. 2nd: I saw him this day for the first time. His symptoms were those detailed, and, in addition, he has a pricking on the back of the left hand, which, with his left lower extremity, feel as if they were constantly "asleep." When pricked or pinched on that half of his body he is scarcely able to feel it. He has but a very imperfect capability of moving the left arm, and in walking puts forward his left leg in a peculiar manner, as if he were uncertain how to depend upon its impression. Has much flatus; sighs and yawns a great deal; and passes a very large quantity of limpid urine. His face is pale and lips bloodless. Pulse 84, small and weak, not differing in the left from that of the right wrist; tongue pale, slightly furred; bowels confined.—℞. *Castor oil*, ℥ss, to be taken immediately. *Sesquicarb of ammonia*, ʒj; *aromat. spirit of ammonia*, ʒiij; *comp. infus of gentian*, ℥viij. Mix. An ounce to be taken every third hour.

Oct. 4. Has dreamt less, and has been rather vigilant than otherwise; is not drowsy, and has no shivering. The body is warmer; has no globus, or pricking on the dorsum of left hand. Sensation on left hemisphere is improved. Can walk better, though he still feels as if there were a piece of wood screwed on to the sole of the left foot. Has much trembling in the left leg when his weight is upon it. Tongue furred, pale, broad, edges indented. The bowels were moved five times by the oil; stools pipeclay-coloured.—℞. *Blue pill*, gr. v, o. n.; *castor oil*, ℥ss; every other morning. Continue the mixture.

Oct. 9. Much better in all respects. Has no headach, drowsiness, vertigo, sense of falling through the bed when asleep, tinnitus aurium, nor globus. Vision much improved. Never feels chilly. His left arm feels heavy; his control over it is greater, and he can grasp my hand much firmer than at first. The left lower extremity does not go to "sleep," and he can bear his weight upon it much better than before. The only part of the body which continues benumbed is a space above the left knee, about five inches in length. Stools pipeclay-coloured. Pulse 100, small weak.—℞ *Cathartic mixt.* ℥ij; *comp. infus. of gentian*, ℥vj; *carbonate of ammonia*, ʒi. Mix. One ounce every third hour.—℞ *Blue pill*, gr. v, every night.

The stools continued of a light colour until Oct. 29th, when then became dark and offensive. The other symptoms continued gradually to improve.—℞ *Cathartic mixt.* ℥viij. An ounce and a half every third hour.

Nov. 3. The bowels have been moved two or three times daily. Motions still dark and fetid, though less so. Is chilly on the left side; that arm feels lighter, and is more easily moved and controlled. Sensation, throughout the left side, is very considerably improved. Says he is so much better he wishes to go to work.

Case 7.—J. C., ætat. 30, married, of sallow complexion and hereditary bilious temperament. After having suffered for three or four days from an uncomfortable distention of the hands and feet, and a sore bruised pain across the muscles of the arms and round the hypochondria, was seized, suddenly, after breakfast, Feb. 13, 1842, with a sense of heaviness and numbness in the palm of the left hand. In a few minutes afterwards his tongue felt benumbed, and he felt unable to move it. Then followed a creeping sensation across the whole of the lower part of the face, up to the cheeks, extending down the neck, the arm, leg and thigh, and the left side. It was attended with a complete loss of sensation on that side. He could neither feel with his hand nor with his leg or foot. He attempted to rise off his chair, from which, on making the effort, he nearly fell. This was accompanied with globus hystericus, lachrymation, great pallor of countenance, and were followed in a short time by a severely lancinating pain in the right temple. In the course of a few hours his paralysis began partially to subside. At five p.m. I saw him. The countenance was crimson, hot, and tumid, especially on the left side and the upper lip, and altogether presented the same appearance as if he had taken shell-fish which had disagreed with his stomach, this swelling had only just begun to appear, and continued to increase for a short time, giving a very bloated cast to the features. There was intense piercing pain in the right temple; intolerance of light; tongue thickly coated, white, swollen, and protruded to the left side; foulness of mouth; much flatulent distention of epigastrium; slight pain on pressure in the course of the colon from the umbilicus to the left groin; general heat; slight perspiration; slight numbness of the left half of the body, when touched or pinched; greatest in the lower extremity; pulse 108,

soft, small. On inquiry, I found he had taken some haricot mutton for dinner the day previously. He could not call to his recollection having eaten anything that could have disagreed with him for some days previously. He had suffered from similar attacks previously, though not so severely, in the first of which he had been depleted largely, and kept upon very poor diet for some time, and his recovery was very tedious. In the interval between the attacks he enjoyed tolerably good health, with the exception of indigestion. His friends objected to his taking an emetic, so I ordered,—*Calomel*, gr. iv; *scammony*, gr. vi. Make a pill, to be taken immediately.—℞ *Comp. rhubarb powder*, ʒi, every third hour.

Ten. p.m. Less headach; countenance much less tumid, pallid; tongue less furred; thirst; pulse open, soft, 64. Complains of being low and weak. There is a sense of heaviness in the tongue, which is still protruded obliquely; bowels not yet moved.

Feb. 14. Is much better; has much less headach; slept well, except when disturbed by the medicine; vertigo on raising his head; slight intolerance of light and noise; muscæ volitantes, and so great an indistinctness of vision that, although I sat on the bedside, he could not distinguish my features; tongue cleaner, protruded obliquely; much flatulence; still some abdominal pain; bowels moved four times, motions watery, natural; skin soft; countenance pale, without tumidity; pulse 60, very soft and compressible.—℞ *Comp. extract of colocynth*, ʒi; *calomel*, gr. xv; *assafœtida*, gr. xxv; *ol. anethi*, gtt. viii. Mix, divide the mass into pills xxiv; take two every third hour, with a tablespoonful of the following mixture:—℞ *Spirit of sal volatile*, ʒij; *hydrocyanic acid*, ʒss; *bicarbonate of soda*, ʒij; *dill water*, ℥vj. Make a mixture. To have beef-tea and maccaroni.

Vespere. Is much better. Still protrudes the tongue obliquely; bowels moved three times; motions healthy, bilious. Omit the pills.

15. Is better in every respect; feels well, but weakly; tongue protruded in a right line; bowels moved slightly; pulse 60. ℞ *Spirit of sal volatile*, ʒij; *hydrocyanic acid*, ʒss; *comp. spirit of lavender*, ʒij; *tinct. of gentian*, ʒiij; *water* to ℥vj. Mix. One ounce every third hour. To have mutton chop and some brandy and water. Was visited by some friends in the evening, and became excited.

On the 16th he was low and desponding; had no muscular power; appetite good; tongue clean. The numbness has not been felt for two days.—℞ *Sulph. of quinine*, gr. xxiv; *aloes*, gr. vi; *sulph of iron*, gr. vi; *Cayenne pepper*, gr. xij. Make twelve pills; one three times a day.

17. Convalescent.

Case 8.—Oct. 1838. Maria Thrall, ætat. 28, wife of a dissolute character; miscarried in July, 1838, and for nineteen days was constantly flooding; her complexion is as exsanguine as is possible. She complains of much severe headach and pain in the face; constant vertigo, to such an extent that she is in momentary fear of falling as she walks; incapability of discriminating objects at a very small distance, though previous to her miscarriage her vision was as good as need be; she cannot do more than distinguish light from darkness with the left eye; muscæ volitantes with the right eye; horrid dreams; globus; weight at epigastrium after eating. Her urine amounted to as much as three quarts daily, quite limpid, has for the last fourteen days been higher coloured and less copious. She states that shortly after her miscarriage she was troubled with severe pains across the upper and back part of her head, but principally on the left side, and she lost the power of raising the left upper eyelid at times for periods varying from half an hour to two hours. Her then medical attendant blistered her behind the ears for the ptosis, with relief. Five weeks since she suddenly lost all use of her right arm; says she could neither feel with or move it (except by swinging it from the shoulder), accompanied with a curious tingling down the "veins." The same sense of weight and want of sensation extended down the right side as far as the hip, below which she was not affected. This temporary paralysis lasted for about two hours, and then subsided gradually. She has, since that attack, frequently lost the use of the right arm for periods from half an hour to two hours; it goes suddenly, and if she has anything in her hand at the time it falls, she not having power to retain it. The bowels are usually costive, especially since the miscarriage, having been as long as six or seven days and had no use of them; at other times she used to suffer occasionally from diarrhœa. Pulse 100, very small and feeble. Tongue broad, indented at margins, pale and furred.—℞ *Rhubarb*, gr. x; *mercury with chalk*, gr. vi. Make a powder. Take one three times a day.

Nov. 1. Bowels moved twice a day; motions are becoming more natural; the use of the arm is now very seldom lost; vision very slightly improved; has a severe pain behind the right ear; fewer frightful dreams; countenance improving; urine becomes much less copious, and acquiring its straw colour. Continue powder.

6. The mouth is becoming very slightly sore; stools still dark and offensive; vision improving.—℞ *Mixt. of magnesia and Epsom salts*, ℥viij; *oil of turpentine*, ʒvi. Mix. Make a mixture. One ounce to be taken three times a day.

12. Is much better in all respects.—℞ *Sulphate of zinc*, ʒi; *dilute sulphuric*

acid, ℥i. Make a mixture. Take from twevle to twenty drops, in water, three times a day.

23. Has improved considerably; she can now distinguish objects tolerably distinctly at some distance, though better with the right than the left eye; rarely loses the use of the side; appetite returning; complexion now begins to be coloured by the blood; stools still dark.—℞ *Purging mixture*, ℥viij.

30. Considers herself sufficiently well to leave off medicine, though I wished her to continue, and wanted to begin a course of iron. I have seen her frequently since, and she continues quite well.

Case 9.—Sept. 1838. Elizabeth Perkins, married, ætat. 36. Was put to bed of her sixth child on July 6th; had a very severe labour, and suffered afterwards from hæmorrhage. Three weeks afterwards, about eight in the evening, she was seized with vertigo and pain in the right side of the head, enduring about twenty minutes, leaving a sense of numbness over the entire of the right side of the body, and a quick oscillating motion of the right arm, which she could not control; this continued for about twenty minutes longer, it then ceased, and she felt as if nothing had ailed her. On the next, and the next evening but one, the same thing occurred; on the latter, instead of the attack leaving her as usual, it deprived her of all power, either of sense or motion, on the right half of the body, except on the sole of the right foot. The toes of this foot were forcibly pointed to the ground, the heel being elevated. There was severe cramp in the gastrocnemius of that leg. The medical man in attendance blistered her thrice on the back of the thigh, for the relief of the cramp, with success. In walking she trails the right leg upon the ground, and has the right arm supported in a sling. Since then she has been troubled with extreme vigilance, which morphia, in large doses, would not subdue. For the first month after her delivery her urine was very scanty, high coloured, and turbid, depositing a pink lateritious sediment; there was slight ardor; for the last two months the quantity of urine has been very much increased, having passed as much as a quart at a time four or five times a day; it is now very rarely turbid. The bowels are costive; the mouth is clammy, and the breath offensive. She states that during the last three years she has been subject to much mental and bodily distress, having worked both day and night for the support of her family. During this time her food has consisted of potatoes, tea, water-porridge, and occasionally, though very rarely, four or six ounces of meat amongst six persons. Since her labour she has, at times, been twenty-four hours without tasting food. She consulted me first on Sept. 27, 1838. Complained of a strong inclination to shed tears, with frequent fluctuations in her spirits; of a severe circumscribed pain over the right eye, which may be covered with the point of the finger; has tightness and difficulty of breathing when hurried; a pricking sensation down the arm, side, and lower extremity of the right half of the body, which have lost the power of sensation, nor can she move them freely and easily. For the last nine weeks she has been gradually recovering the proper use of her side. The tongue is furred; the pulse is slow and feeble.—℞ *Cathartic mixture*, ℥viij. One ounce and a half every third hour.

Oct. 5. Is not so well since she has been purged. Motion and sensation more impaired; the dejections were dark and fetid.—℞ *Sesquicarbon. of ammonia*, ℈i; *spirit of sal volatile*, ℥ij; *comp. infus. of gentian*, ℥vijss. Mix. Take two spoonfuls every third hour. While she was under examination this day she fainted, the room being warm, and she was a considerable time in recovering.

Oct. 14. There is now a similar affection of the left side to that of the right; it is, like the latter, not permanent, coming on two or three times in the week. Has a severe lancinating pain down the right sciatic nerve, followed by complete numbness in the entire limb, which continues for a variable period, and when it subsides she feels quite well. Her general health is beginning to improve. The catamenia have appeared again for the first time since her labour, though they are scanty, and of a pale greenish cast. Has been sick two or three times since the last visit; the bowels have been moved regularly, the motions continuing dark and offensive. She complains of a lancinating pain across the neck of the bladder in micturition; the urine continues to scald slightly.—*Aperient pills* ij, to be taken immediately. Repeat the tonic mixture, Hss.

The woman continued to improve so fast that she shortly discontinued her visits. I have seen her very frequently since, and found that she has the perfect control over the movements of, and complete sensation in, the right half of the body as well as in the other.

(To be concluded.)

DISCRIMINATION OF BLOOD FROM OTHER DRIED ANIMAL FLUIDS.

Dr. Mandl gives the following formula for distinguishing blood deposited on any kinds of texture, from any other animal fluid similar to it in general appearance:—Suspend the texture in cold distilled water, taking care that it be prevented from touching the sides of the vessel, which is to be kept perfectly steady. After becoming thoroughly penetrated by the water, if the substance be blood, reddish filaments (*stries*) will stretch downwards from the texture to-

wards the bottom of the vessel, to which they will fall by degrees, giving a reddish colour to the lower strata of the liquid. At the same time the spots on the texture will become discoloured, and covered by only a thin layer of a greyish-coloured substance. This is fibrin, with a proportion of the red particles remaining undissolved; the reddish filaments descending to the bottom are, on the contrary, the globules of colouring matter. Now carefully remove the texture, with its adherent fibrin, and on stirring the liquid with a glass rod it will acquire a rosy tinge. Heated gradually to near the boiling point, it becomes turbid, and either deposits flocculent albumen, or assumes a pearly appearance. If flocculent matter be thrown down, it is of a greenish-grey, without a tinge of red or rose colour, and the supernatant fluid, if not destitute of colour, is of a light greenish-yellow. If the liquid be treated with pure potass it assumes a colour which is greenish, or rosy, according as viewed by reflected or refracted light. No colouring matter of any other animal product so treated will give rise to similar phenomena. The filaments of fibrin left on the texture are soft, rather elastic, and soluble in a solution of caustic potass, and the resulting solution, treated with a little hydrochloric acid and free chlorine, gives rise to a flocculent deposit of animal matter.

The French physicians have latterly been directing their efforts to find a mode of distinguishing, if possible, the blood of different kinds of animals. M. Barruel (Annales d'Hygiène, tom. i., 267,) has gone far beyond his competitors in this march. His process is to place the blood to be experimented on in a glass, and to add to it about one-third or half its volume of sulphuric acid. On agitating the mixture with a glass rod, a volatile odoriferous principle is given off, peculiarly characteristic, he says, of the blood of different kinds of animals, and the differences in which are to be detected by the sense of smell. M. Barruel asserts, that by this test he can even distinguish the *blood of the male from that of the female*, but as few persons pretend to such acuteness as that, the correctness of his researches has hitherto met with few advocates. The most that we have been able to ascertain positively upon this subject is, that the coloured globules in the blood of man and mammiferous animals are circular, while those in oviparous animals are elongated, with an elevation in their centre corresponding to the place of the nucleus. Among the mammifera a remarkable exception exists, on the authority of MM. Milne Edwards and Geoffroy St. Hilaire, in the camel genus, the red globules in the blood of which are elongated as in the ovipara; but, in the present state of animal chemistry, we have no means of distinguishing between the blood of any other kinds of mammiferous animals.

CASE OF STRANGULATED HERNIA,

WITH

HYDROCELE OF THE SAC, AND OPERATION.

WITH REMARKS ON THE NATURE OF

HERNIAL SACS, AND THEIR TREATMENT.

By John Gay, Esq., Surgeon to the Royal Free Hospital, the Provident Clerks' Assurance Society, &c.

A little type-compositor, ætat. 17, named William Watkins Wynn, applied at the Royal Free Hospital, on the 6th of September, with a swelling along the course of the spermatic cord, which had the usual appearances of oblique scrotal hernia. Mr. Waugh (who was in attendance for me), with Mr. Hill, the house-surgeon, taking this view of the case, instantly attempted its reduction by taxis, but could not succeed in removing the tumour. The lad was then placed in a warm-bath, faintness soon ensued, and by means of a little manipulation at this crisis, the swelling was made to disappear as though the contents of a hernial sac had been returned into the abdominal cavity. In a few hours the boy recovered and left the institution.

Three days afterwards he made his reappearance amongst my out-patients, and stated that on the day following that on which he before applied, after some exertion, the rupture again took place, and had remained, notwithstanding his endeavours, in imitation of those which had before been successful, to return it. The swelling had now become painful, especially that part of it within the inguinal canal, and the bowels had not been relieved since its appearance. His countenance was pale and betrayed a little anxiety, so that I lost no time in examining the cause of complaint, and discovered on the left side a swelling which ran along the course of the inguinal canal and cord to the globus major epididymis, the testis being situated beneath and the cord behind it. It was apparently uniform in its consistence, tense, and somewhat constricted at the situation of the outer ring. The act of coughing gave a considerable impulse to every part, but the succussion was most strongly felt at two points, viz., at the point of constriction and at its fundus in the scrotum.

These symptoms, together with the account which I had of what transpired on his previous appearance at the hospital, led me at once to suspect that it was a case of hernia, and to attempt its reduction by the usual means, without any delay. Four hours had now elapsed since his admission, and our endeavours to procure relief were found to be unsuccessful. The

pain in the tumour, and upon pressure in the lower part of the abdomen, had increased; the boy's countenance indicated more anxiety, and nausea had supervened; circumstances which induced me at once to resort to an operation. It should here be stated that the peculiarity about the general aspect of the tumour, which resulted principally from the hour-glass contraction, gave rise to some doubts in the minds of Messrs. Coulson, Taunton, and other friends present, as to its wholly consisting of intestine; and under the impression that it was a complex case, the complication, in all probability, being hernia with hydrocele of the cord,

the operation was commenced.

The patient was laid upon the table in the usual manner, and an incision made through the integuments from about the situation of the external abdominal ring to nearly the lower end of the tumour. Proceeding by cautious dissection, the sac was reached and opened by a small sidelong incision; with the aid of a director it was then slit up; about two ounces of fluid escaped, and at this moment a knuckle of intestine was observed just protruding from the external ring, in a condition which betokened its having been subjected to constriction for some time. It was readily returned through the inguinal canal into the abdomen upon the tip of the finger, the lad being at this moment faint, and in the act of vomiting. The relaxation of the stricture which permitted the intestine to return without its division, depended probably, in part, upon the relief to the tense condition of the sac consequent upon the discharge of its fluid contents, the constriction having, upon the same hypothesis, been aggravated by that tension. The bleeding was of no consequence, a pledget of lint was cautiously laid in the sac, the edges of the wound were brought together by sutures and adhesive plaster, reserving a sufficient space for the removal of the lint; cold-water dressing completed the topical applications, and the lad was then removed into bed.

On the day following,

as an important amount of inflammation was observed to have been set up in the sac and along the parietes of the inguinal canal, and pressure in the abdomen gave a little uneasiness, I had the lint removed. Suppuration, with slight febrile action, followed, but not more than the process of healing seemed to require, and ultimately complete obliteration of the sac. Two abcesses of the scrotum formed during the healing, one just beneath the root of the penis, the other further back towards the pudendum; they were opened, discharged their contents, and closed up. The boy was discharged on the 19th of October.

After the operation a difference of opinion was found to exist as to the nature of the sac and its relation to the protruded intestine. My impression on opening it was that it was lined with peritoneum; that, in fact, it was a cul-de-sac continuous with, and opening itself into, the peritoneal cavity of the abdomen, and that the knuckle of intestine had descended so far into it as the fluid contents of the sac would permit, and became constricted at the external ring, directly by its pillars, and indirectly, as I have before stated, by the extreme distention of the portion of the sac below it. Another suggestion was that it was a case of hernia with common hydrocele of the cord; and, in accordance with this, which appeared to be the predominant opinion, I adopted, as the after treatment, stimulation of the sac, with a view to its ulterior obliteration. The almost immediate consequences of that procedure (inflammation of the parietes of the sac and inguinal canal) obliged me to withdraw the lint at the end of twenty-four hours, and I then endeavoured to make the real nature of the case more clear by cautiously traversing the interior of the cyst and its outlets by means of a curved probe. On introducing that instrument for this purpose, I soon found that it passed readily, and without any obstacle, into the inguinal canal, and through it towards the abdominal cavity, so far as its length and the swollen condition of the parts would permit; and therefrom I felt convinced that the sac was peritoneal, and directly communicated with the abdomen.

The question as to the production of the sac next presented itself to my mind, and I can have no hesitation in believing it to have been congenital, and to have resulted from a non-occlusion of the greatest portion of the channel which in the fœtus existed between the abdominal cavity and the tunica vaginalis testis. And I do not see why this arrest in the obliterating process with regard to that channel should not be called to our aid in elucidation of a circumstance connected with the production of most hernial sacs, which has not as yet, as far as I am aware, received a satisfactory explanation. I refer to

The adhesion of the sac to the parts amongst which it is found.

Mr. Lawrence states that "adhesion takes place so quickly that we find the sac universally connected to the contiguous parts, *even in a rupture of a few days' standing;* and these connections become afterwards so strong and general that we might suppose the hernial sac to have been originally formed in its unnatural situation." This is the sum and substance of what writers on hernia appear to know of the hernial sacs; but I cannot admit the position, because it is unsupported by the symptoms and other circumstances which usually attend upon the descent of a hernia. In some cases, it must be admitted, the intestinal protrusion is gradual; the patient complains of some un-

easiness about the groin which, probably, together with some dyspeptic complaint, has annoyed him for some time, and the surgeon, on searching for the cause, discovers the abdominal parietes in that situation apparently thin or "weak" (as it is commonly expressed), and that an unnatural impulse is communicated to the hand in coughing. If neglected, a swelling makes its appearance; the intestine is forced gradually to insinuate itself through the inguinal canal into the scrotum; the cellular, and other tissues in its course, give way before it, with the occurrence of well-marked uneasiness, and thus form a receptacle, occasionally of an enormous size, for the stretched peritoneal sac and its contents. This description of case is, however, rare, in comparison with another in which the descent occurs early in life and suddenly, and in which the hernial mass rarely becomes so bulky. In the "Traite Pratique des Hernies, &c." par P. L. Verdier, the author gives a table of the comparative frequency of hernia at different ages, from which it would appear that out of 1226 cases which were known to him, 973 occurred under the age of ten years; 152 between the ages of ten and twenty; 57 between twenty and thirty; 25 between thirty and forty; 11 between forty and fifty; and 8 between fifty and seventy; showing very plainly that by far the greater number of hernial descents occur to the young. Now, there is wanting in the history of these cases, I mean of those which take place suddenly and in early life, an account of the disturbance and inflammation which would most assuredly accompany the *bursting* of a hernial mass into the scrotum, and attend the perfect adhesion of the sac to the surrounding textures, supposing the sac to be formed by dilatation, and protruded at the time the hernia is observed. I firmly believe the contrary to be the fact; and that, as in the case introductory to these remarks, the sac is congenital in by far the large majority of cases, and results either from an absolute want of, or arrest in, the processes of obliteration, which usually occlude the channel of communication between the tunica vaginalis testis and abdomen in fœtal life. In this, as in many cases, the obliteration had commenced on the scrotal side of the canal, and the fact of the testis being in this manner separated from the hernial sac would distinguish this from that form of hernia usually termed "congenital," in which the intestine and testis are in juxta-position.

The obliteration of the channel to which I have been alluding does not unfrequently happen. In the course of my dissections I have found it patent in three instances at the ages of two, three, and eight. Camper dissected seventeen newly-born children for the purpose of ascertaining this point, and found the canal open on both sides in eleven, obliterated entirely on one, and but partially on the opposite side in five, and completely closed up on both sides in one only. Wrisberg made similar observations; but it is only just to state that in the attempt to make such discoveries some eminent anatomists, amongst whom I may reckon Mr. Lawrence, have failed.

These considerations have satisfied me of, at all events, the great *probability* that in the majority of hernial cases, especially in those which occur in the season of youth, when activity, even to violence, is most freely and frequently indulged in, the formation of the sac is antecedent to the period at which the hernia manifests itself; that, in fact, the sac is *congenital*, and results from an arrest in the processes which usually complete the obliteration of the canal, which, upon the descent of the testis, forms a communication between its serous tunic and the cavity of the abdomen.

From what has already been adduced, hernia appears, in such cases, to be attributable mainly to a defect in the processes of adhesive inflammation which naturally take place at a certain period in the tissues of the infantile spermatic cord; and I see no reason why, when such a defect has been detected by a hernial protrusion, and as a supplement to an operation, it may not be safely remedied by means adapted to procure the action in default; in other words, by means adapted to excite inflammation in, and obliteration of, the sac. Surely, in thus imitating the processes of Nature, and supplying her defects, surgery cannot be charged either with rashness or caprice. I am aware that my proposal is not new,—that various devices have been resorted to in order to effect the same important end, some dangerous and cruel, others less severe and comparatively innocent, but all without the *rationale* for their adoption which I believe these considerations are adapted to supply; and, therefore, for the most part, these operations have been abandoned as useless and even eminently hazardous.

One of the most serious obstacles to the steady advancement of medical and surgical art is, probably, the custom which has too much obtained of yielding an undue, nay, a blind credence to the axioms of ancient pathology. Hence, an incalculable amount of malignity is fancifully ascribed to *some* diseases, so that the bare mention of their names in proposing a surgical operation, is sufficient in the minds of some practitioners of modern times to forbid its consideration, much more its sanction. Foremost in the category of diseases to which I have just referred I would place "peritonitis," and believe that the false notions of danger attributed to it, in total disregard of the condition under which it may exist and by which its results must invariably be modified, have proved a serious hindrance to the progress of surgery. In an unhealthy state of

the system the raising of a blister might, perchance, be followed by fatal consequences; and spontaneous peritonitis, as it generally occurs in individuals unfavourably predisposed, is ever replete with danger; but it does not follow, in my opinion, that the same inflammation procured in a system otherwise in a state of health, and especially in a comparatively remote channel, which has no functional intentions to fulfil, and which Nature has in vain attempted by the same process to occlude, is to be regarded with equal apprehension. I have yet to learn that which neither my own experience nor the retrospect of the fatal cases of incarcerated hernia on record have taught me, viz., that the mortality after these operations, as well as after others in which the peritoneum has been injured, has resulted from *pure traumatic peritonitis*; and, on the contrary fearlessly hazard the opinion that this membrane, in a healthy individual, may be wounded with comparative impunity.

In the case now related the adhesive inflammation was set up by means of

A piece of lint introduced into the sac,

and allowed to remain for twenty-four hours, a period equal to the production of an amount of inflammatory action sufficient to ensure its obliteration. This is the plan which I now beg to propose for the consideration of the profession. Of course it would not be suitable for old and large hernial sacs; the cases must be selected by the surgeon; and, in my opinion, that would be the best calculated for such treatment in which the sac is small and the intestinal descent has been recent. A single case is, I am aware, not sufficient, however favourable, to warrant the adoption of this treatment as a rule; my object in bringing it before the profession is to obtain a just estimate of its reasonableness and practicability.

P.S. A similar case, but occurring in earlier life (at the age of fourteen months), is mentioned by Mr. Lawrence, in his work on hernia, page 59, second edition; proving, as Mr. L. says, an exception to the general rule laid down by Mr. Pott, "that all those ruptures which appear in the scrotum of young children are congenital." The operation for incarcerated hernia was successfully performed, *but the hernia appeared again afterwards.*

Finsbury Pavement, Nov. 12th.

"Essence of *camphor* is made by dissolving camphor in solution of muriate of ammonia."—*Dr. Traill.*

"A very good *cream* is formed by mixing up magnesia, calcined, with afterings of milk."—*Dr. Traill.*

SULPHURIC ACID A PREVENTIVE OF LEAD COLIC.

To the Editor of THE LANCET.

SIR,—The permission to make use of your widely-circulated Journal to publish the means which have been found perfectly successful in preventing that most distressing malady, the lead colic, to which the workmen employed in the manufacture of white lead are so liable, would oblige, Sir, your's very respectfully,

E. W. BENSON,
Managing Director of the Works.
British White-Lead Works, Birmingham,
Dec. 10, 1842.

Soon after the establishment of the British White-Lead Works, and for some succeeding years, the lead colic prevailed amongst the workmen to a very distressing extent. The usual precautions were adopted of providing the workmen with gloves, and of enforcing strict attention to cleanliness on their part, ample means for this purpose being at the same time supplied, the men also being caused to change their working dresses on leaving their employment. Effective means, moreover, were adopted for carrying off the dust which arises in some of the operations, thus preventing as much as possible the inhalation of particles of white lead suspended in the air. The work-people had also a regular medical attendant provided by the proprietors of the works.

Notwithstanding the precautions thus adopted, the observance of which was carefully enforced, some of the work-people were constantly suffering from illness, and in the hot season the number of cases of colic much increased.

The copious use of treacle-beer has been considered at many white-lead works to be serviceable, to some extent, as a preventive of this malady, and the beverage was supplied *ad libitum* in our establishment.

I met with a statement some time since, that "sulphuric lemonade" had been successfully used at a white-lead manufactory in France as a preventive of the injurious effects of white lead, and it occurred to me that by adding *sulphuric acid* to the treacle-beer then used by our people, its supposed efficacy might be tested. This idea was carried into effect in the summer of 1841, and the results have proved most gratifying, as, although during several weeks after the addition of the sulphuric acid to the treacle beverage, little advantage seemed to be derived, yet the cases of lead colic became gradually less frequent, and since October of that year, or during a period of fifteen months, not a single case of lead colic has occurred amongst the people.

As no other change has taken place in the circumstances under which these men are

placed, nor in the influences to which they are exposed, I can only attribute this gratifying result to the employment of the sulphuric acid, which I conceive produces its effect by converting the highly poisonous carbonate of lead into the innocuous sulphate of lead. I am therefore anxious that the work-people employed at other manufactories should be protected by the means which have been found so perfectly effective in this establishment.

It will be seen by the annexed formula that bicarbonate of soda is also added to the treacle-beer, and that, consequently, sulphate of soda is produced, but the proportions of soda and sulphuric acid are such that rather less than one half of the sulphuric acid becomes neutralised. The object in adding bicarbonate of soda is to give a pleasant briskness to the beverage.

Formula for preparing the Sulphuric Beer.

Take of *treacle*, 15 lbs; *bruised ginger*, ¾ lb; *water*, 12 gallons; *yeast*, 1 quart; *bicarbonate of soda*, 1¼ ounce; *sulphuric acid* (oil of vitriol), 1¼ ounce, by weight.

Boil the ginger in two gallons of water; add the treacle and the remainder of the water, hot. When nearly cold transfer it to a cask, and add the yeast to cause fermentation. When this has nearly ceased add the sulphuric acid, previously diluted with eight times its quantity of water, and then add the bicarbonate of soda dissolved in one quart of water. Close up the cask, and in three or four days the beer will be fit for use. As acetous fermentation speedily takes place, particularly in hot weather, new supplies should be prepared as required.

NATIONAL GRATITUDE TO THE GREATEST NATIONAL BENEFACTOR.

A MAN often misses his century. Had Jenner lived in ancient Greece or Rome, and proclaimed a remedy which, without danger, pain, or difficulty, would become an antidote to the most terrible disease, what apotheoses, what panegyrics, would have been his reward! He would, at least, have received rank among the demi-gods; temples to his memory, games in his honour, would have been instituted. But in *modern* times, while men whose influence on the destinies of mankind is of more than questionable utility have been *fêted*, titled, immortalised in bronze and marble, not one tablet, not a single public memorial, hands to posterity the modest name of the illustrious discoverer of vaccination. Compulsion even seems necessary to insure the employment of his inestimable remedy by some who ought to be in the advance, rather than at the rear, of civilisation; while certain political economists even abhor him as a main author of a "surplus" population! However, there are diseases enough left to prostrate life, taking into the calculation those that are made by charlatans and quacks.

ON THE

FORMATION OF MEDICAL CLASSES FOR TEACHING THE MUSICAL EAR.

To the Editor of THE LANCET.

SIR,—Now that the value of auscultation is universally admitted, it is imperative on those who are engaged in medical tuition to give this subject the fullest consideration. It is true that individual lecturers, especially those engaged in clinical instruction, may take great pains to afford their pupils the requisite information, but I think that something more might be effected in this branch of education with respect to the majority of students. It must be confessed, that there are yet great numbers of medical men, especially amongst those who are located in the country, who are altogether ignorant of the use of the stethoscope, who never employ it in their own practice, who profess to question, or really doubt, its utility, and some who have the honesty to confess that "they can make *nothing of it*." There are others, also, who, after giving some attention to the subject, abandon it in despair, or secretly conceive it a deceptive method of diagnosis. This discrepancy of opinion respecting an instrument which is at once so simple in its construction, and so practical in its application, acknowledges a variety of causes, but there is one which, whilst it has excited the least attention, is perhaps the most extensive in its influence. It is common and proper to insist on the *abuses* of this instrument as the occasion of much difference of opinion; it is equally right to attribute something to a deficiency of *pathological information* on the part of the practitioner; but it still appears to me that much more is to be ascribed to a want of cultivation of *the ear*. We know that some persons can scarcely distinguish the "National Anthem" from the "*Old Hundredth*," and declare that they have "no taste for music." Can it, then, be a matter of surprise, that they find a difficulty in becoming acquainted with the stethoscopical indications? I would say of "the man that has no music in himself," so far as regards auscultation, "let no such man be trusted." Now I am quite sure that, to use the stethoscope with advantage, the ear ought to be *trained*, just as it is necessary for the purpose of singing. In fact, there is a great similarity in the process of learning to *hear* and that of learning to *sing* with correctness, for both require an accuracy of *comparing* sounds. I think I may say with safety (other things being equal) that he who is possessed of a musical ear is the best fitted for stethoscopical examinations. It is well known that those who are proficient in music are capable of distinguishing the various instruments in a large concert, and discriminating any which is not in accordance with

the rest. This appreciation of sound may be cultivated to a degree which is scarcely credible to those who are ignorant in such matters. The quick ear of the professor separates from all accompanying sounds the sound of the faulty instrument, where no such aberration could be distinguished by the most eager attention of the unitiated. It is commonly acknowledged that different persons have naturally different capabilities of distinguishing and comparing sounds, but it is equally well known that the ear is susceptible of very considerable cultivation. A friend of mine lately related to me an instance in point, in the case of a person who was learning to sing by the new method of instruction which is so popular at the present time. At first this person was altogether unable to tell when he was in tune with the rest, and imagined that in his case there was a total incapacity to learn, but after some practice he acquired, as it were, a new sense of discrimination. The plan of singing in classes, which I imagine to be the principal feature in the systems of Mainzer and Wilhelm, is well adapted for improving the ear, a few simple notes being repeated until the performer is able to attune his voice with accuracy to the rest. It would be well if, in connection with our medical schools, opportunities were afforded of learning so much of music as relates to the distinguishing of sounds, and this might easily be effected under the direction of a competent instructor. However absurd the idea may appear, on the first broaching of the subject, I feel firmly persuaded that this would not be found the least useful part of medical education, but, on the contrary, would be a good introduction to the study of auscultation. I happen to know a medical gentleman who is extremely fond of music, and who has an equal *penchant* for the stethoscope, and I am confident that his acquaintance with, and partiality for, the latter, is greatly dependent on his inclination for the former. The young stethoscopist is like a man listening to a concert, who hears a variety of sounds, the elements of which he cannot separate. It is not until the ear has acquired some proficiency that he can fairly analyse the combination. Then he will be able to hear the sounds of the heart quite apart from those of the respiration, and to notice any morbid peculiarity distinctly from the other sounds which are present. I have heard many students, on first using the stethoscope, even declare that they could hear nothing at all. They were continually distracted by every noise from without. A certain degree of attention to *time* is, also, an element in the acquisition of music which I am far from considering as unimportant to the stethoscopist. On the contrary, I am of opinion that it will be found to assist very materially in the estimation of disease, and will no doubt be found to have applications which are at present but very faintly understood. In conclusion, may I be allowed to express a hope that if you agree with me in my estimation of the value of the cultivation of the *musical ear* for the purposes of auscultation, you will be induced to assist me, in your editorial capacity, in urging the profession to include some attention to this subject in the *curriculum* of education. I have the honour to be, Sir, your obedient servant,

JAS. BOWER HARRISON, M.R.C.S.
Surgeon to the Ardwick and Ancoats Dispensary.

Broughton, Manchester,
Nov. 26, 1842.

*** The attempt to act upon the suggestion of our correspondent would probably not want encouragement amongst medical students, but it would require much reflection and practical ingenuity to render the scheme useful, and confine its application within proper limits. For Heaven's sake, though, let us have no proposals to extend, by any contrivances, what are called the "curricula" of medical education, enacting additions to the already vexatious and most mischievous courses of "recognised" lectures. An abolition, not an extension, of these monstrous abuses in medical education is in prospect, knowledge, not the pretence of knowledge, being the leading characteristic of the demand that should be made of candidates for admission into the profession.

REPRODUCTION OF UTERINE ACTION BY ALTERNATE WARMTH AND COLD.

To the Editor.—Sir: The following note is so replete with practical interest that, although obviously not intended for publication, I cannot refrain from sending it to you for that purpose. I am, Sir, &c.

MARSHALL HALL.

14, Manchester-square,
Dec. 2, 1842.

"Stamford, Dec. 1, 1842.

"My dear Sir,—Some little time ago I had under my care a case of puerperal convulsions which terminated well. In the course of it two circumstances illustrative of your system occurred. The patient became conscious, but was obstinate. With great difficulty I forced some liquid into the mouth, but she would not swallow; I, therefore, dashed cold water in the face, and the contents of the mouth were instantly gulped down. This novel mode of making patients swallow was repeated, I should say, a dozen times, and with the same invariable effect. During the convulsions the labour stopped.

There was, as it were, a metastasis of muscular action, from the apparatus of parturition, distributed over the whole system. Every resource in this state of things which was employed to produce uterine pains did but aggravate the general convulsions without acting on the uterus itself.

"After the lapse of many hours, however, the labour was resumed, and now the cold water, applied suddenly to the abdomen, was most effective in producing uterine contractions. After a little while, however, this lost its utility. The abdominal surface becoming *cold* from the repeated application, the water no longer acted as an *excitant*. Accordingly warm flannels were applied to restore the temperature, and then cold water was again applied with decided effect. This alternate application of cold and heat strikes me as being something new; it is of great value in cases of hæmorrhage from the uterus. The vital power of the patient is unable to bear the continued application of the cold, and when that ceases to do good it must, under such circumstances, produce harm. With the alternate application of heat and cold, however, the latter valuable remedy may be used, so long as it is necessary, without fear of its utility being worn out. Your's, most truly,

"CHAS. SIMPSON.

"To Dr. Marshall Hall."

QUESTIONS RELATING TO SCARLATINA.

To the Editor of THE LANCET.

SIR,—Mr. Rees, in your number of Dec. 3rd (page 346), in common with most writers on scarlatina, takes the "prominent papillæ and unnatural redness" of the tongue as *the* diagnostic in scarlatina, but then adds that he has "met with a few children in whom the prominent papillæ, with the redness of the tongue, are always observable, but the absence of *all* other symptoms will direct in such instances;" yet he afterwards avers that this state "seems to originate from, or to be connected with, *great irritability* of the gastro-pulmonary mucous membrane, shown by *frequent* diarrhœa and *oft-recurring* catarrh." The "*no* other symptoms" thus really become symptoms of importance. Mr. Rees appears to have overlooked the possibility of the disease being essentially present, even with an inappreciable affection of the skin. Mr. Wilson, in his lecture, contained in the same number, notices a permanent idiosyncrasy to attack, whereby a more or less severe form may be induced, on exposure, in each epidemic, and this, perhaps, may account for the re-appearance of certain symptoms, though the usually once-occurring disease has been previously passed through. The non-susceptible idiosyncrasy is equally well marked, and may also equally exist only in part; and in either of these the disease may be so modified that it shall affect the skin only, or the mucous membrane only, or the one partially and the other completely, as the case may be. I have repeatedly observed, where there have been several severe cases in one house, that *every* inmate has presented *some* symptoms, which, though slight, were readily discoverable, as though the morbid poison exerted its influence on all, but yet was incapable of fully developing its peculiar action on those individuals, protected by natural or acquired idiosyncrasy. The question is rendered one of interest whether persons in this state, themselves evidently tainted with the morbid poison, may become the medium of its communication to others? I believe that this may be affirmatively answered, and if so, it is evidently of some importance to determine which of these slight and incomplete attacks is really scarlatina. If there were *no* other symptom than the state of the tongue, we might rest satisfied; but when that is coupled with "diarrhœa and catarrh" (or any other affection either of the mucous membrane or the skin, however partially), it becomes a very suspicious symptom, such cases being probably those where there is either a special susceptibility to the infection, modified by former attacks, or some peculiarity which prevents the skin assuming the usual morbid action. I have been led to the belief that this partially-developed form is far from uncommon, but from its presenting no very prominent external symptoms it is often incorrectly designated. This has an important bearing on the question of the occurrence of idiopathic dropsy in children. Anasarca supervenes after this form as well as after the most severe attacks. My own observation entirely coincides with the experience of Mr. Rees, as to its non-occurrence in children "apparently unconnected with other disease, but as the consequence of scarlet fever;" and the truth of this observation will, I think, be rendered questionable only by omitting strict inquiry as to the preceding state of the patient. It not unfrequently happens that we are told by the mother, on a general inquiry, that there has been *no* eruption, but close investigation will mostly afford evidence that there have been symptoms quite as characteristic, though the absence of this is often hastily assumed as evidence of the non-invasion of fever previously. It must be granted that the eruption is generally, nay, almost universally, present, but it is very commonly so evanescent as to pass unnoticed. It may be of some practical importance to decide whether the anasarca of children is thus *constantly* an indication of the prior existence of scarlatina, and, if it be, whether the infection of fever may still remain, and constitute an unsuspected source of propagation? I certainly have never seen an instance in which scarla-

tina appeared to be communicated during this state. May it not be that the serous effusion is an evidence of a morbid action entirely different from that in which the febrile poison is generated? I remain, Sir, yours obediently,

GEORGE BEDDOW.

Jennen's-row, Birmingham,
Dec. 8, 1842.

CONSTIPATION, FROM STRICTURE, DURING FORTY-THREE DAYS.

To the Editor.—Sir: Having perused, in THE LANCET, for Nov. 26th (page 327), a case related by Dr. Johnson at the Westminster Medical Society, in which constipation, arising from scirrhus of the rectum, had existed for forty-five days, and observing that Dr. Johnson remarks that "he had never before known such protracted constipation dependent on *disease*," may I beg the favour of your insertion of a case, in some respects analogous to his, which lately occurred in my own practice. On the evening of the 23rd of April, my attendance was requested on a married lady, forty-seven years of age, who stated that for five previous days no evacuation had taken place from the bowels, and as she had taken salts and senna without effect, she thought it right to seek medical aid, although not suffering any further derangement of her health. Her appetite was unimpaired, and she had neither pain nor sickness. Calomel, castor and croton oil, elaterium, turpentine, and, in fact, purgatives of every kind, were administered, and (which is remarkable) uniformly retained by the stomach. Injections of warm-water and the tobacco clyster, the warm-bath and friction to the abdomen, were used, and a bougie was also tried, but could not be carried beyond the rectum. Although these remedies proved unavailing, the pain suffered by the patient was inconsiderable, and she was able to take carriage-exercise until within two days of her death, which took place on the thirty-eighth day of my attendance, making (the five-days previous to my seeing her included) a constipation of forty-three days duration.

A post-mortem examination discovered a stricture at the junction of the sigmoid flexure with the rectum, the large intestines being enormously distended, and filled with fæces of a soft consistence; the colon was gangrenous, particularly at about the transverse arch. The contraction, which was of a circular form, and rather more than an inch in length, had no doubt existed to a certain extent for a long time, as the bowel was much thickened, and converted into a kind of gristly substance, its passage being narrowed to the size of a crow-quill. All the other viscera were normal. I am, Sir, your obedient servant,

C. C. WALLIS.

Castle Cary, Somerset,
Dec. 8, 1842.

CURE OF VOLUNTARY STARVATION.

A CORRESPONDENT at Brompton lays before us the following anecdote of a cure singularly effected in an insane patient who had obstinately refused to eat, related, he says, by one of the most talented and popular preachers in Naples, from the pulpit, to a congregation of nearly fifteen hundred persons, in his presence, in 1832, while illustrating the effects of mental hallucination, *à propos* of the mystery of Nebuchadnezzar's transformation, which the preacher referred to mental delirium, quoting in support of his view the opinions of several learned theological doctors:—

"Whilst residing at Rome," said the preacher, "I paid a visit to the lunatic asylum there, and among the more remarkable patients one was pointed out to me who had been saved with much difficulty from inflicting death upon himself by voluntary starvation, in bed, under an impression that he was defunct, declaring that dead people never ate. It was soon obvious to all that the issue must be fatal, when the humane doctor bethought him of the following stratagem. Half a dozen of the attendants, dressed in white shrouds, and their faces and hands covered with chalk, were marched in single file, with dead silence, into a room adjoining that of the patient, where he observed them, through a door, purposely left open, sit down to a hearty meal. 'Halloa!' said he that was *deceased*, presently, to an attendant, 'who be they?' 'Dead men,' was the reply. 'What,' rejoined the corpse, 'do dead people eat?' 'To be sure they do, as you see,' answered the attendant. 'If that's the case,' exclaimed the defunct, 'I'll join them, for I'm famished;' and thus instantly was broken the spell."

VENT IN THE TOOTH WITH INTRA-DENTAL ABSCESS.

To the Editor.—Sir: Mr. Saunders, in his treatment of intra-dental abscess (page 347), appears to have overlooked a cause that must prevent his plan of drilling the inserted "stopping" in teeth, from being likely to meet with continued success. With whatever degree of firmness tinfoil may be inserted into a carious tooth, in cases in which the hole has been drilled, substances of a hard nature will, in mastication, from the malleability of the metal, close the vent in a short time, and this defect will be increased

by the hole being drilled in an oblique direction, although, were it otherwise, the hole would, as Mr. S. says, be closed by a portion of food remaining in it after eating. And this objection would be the same were the stopping composed of gold instead of tin. I think a better method of giving vent for the escape of the pus is by drilling a hole from the neck of the tooth to the floor of its cavity; and, after the stopping has been inserted, probing the canal, to see that it remains clear. This appears to me the only means that can *continue* successful. The hole will require to be drilled with such precision and care (in order to insure its opening exactly on the floor of the cavity) as must be employed by every member who would successfully practise the profession. I am aware that there may be an objection started to this method, viz., that the ivory, or dentine, of the tooth being exposed, is liable to become affected by caries. The canal, however, will be made in a part of the bone *which is then in a healthy state*, consequently a long time will elapse before it becomes diseased. I treated a case in this manner about two years since, which I had the opportunity of seeing only three weeks back, and I am happy to say it still continued successful. I am, Sir, your obedient servant,

SAMUEL GHRIMES, Surgeon-Dentist.
Baker-street, Portman-square,
Dec. 9, 1842.

LIEBIG'S "ANIMAL CHEMISTRY."

To the Editor of THE LANCET.

SIR,—The remarks of Dr. Ayres in your last number (page 342) induce me to offer a few observations for publication in your next Journal, in the hope that it may have some influence upon a few of your correspondents. Liebig has stated that his views were, previous to publication, submitted to the leading physiologists on the continent, including Müller, Wagner, and Valentin. It may be presumed, therefore, that none of his views bear on the face of them their own refutation, as your correspondent would seem to think; indeed, we may with safety affirm, that all our present supposed knowledge in relation to the subjects of which Liebig treats, was well weighed against every conceivable objection, before his book was submitted to the public. In fact, to those who are familiar with German literature, his views have been known for upwards of a year, having been widely circulated in his own journal, and in the *Algemeine Zeitung*.

I pass over the observations of your correspondent respecting the definitions of *vegetable* and *animal*, as embracing much too fine a question for perfect solution in the present state of our knowledge, merely submitting, as a general argument in favour of Liebig's statement of *locomotion* being the distinctive attribute of animals, that it is, I believe, universally acknowledged to be such an attribute. With reference to his theory of the bile, Liebig obtained his facts from a physiologist, and your correspondent must attack the physiologist, not Liebig, respecting the accuracy of those facts. If your correspondent had not Burdach by him, to acquaint himself with the facts, why write upon the subject until he had mastered it? Is Liebig's name so mean an one? Liebig has never interfered with the purely physiological part of the question. He has said that *physiologists* state that men secrete from seventeen to twenty-four ounces of bile daily, but that he finds no bile in the excrement; hence it follows that it is retaken into the system, between the point of its entrance into the intestines and the anus. Liebig adds, "It remains for the physiologist to determine *by experiment* whether the conclusions drawn by the chemist from such a fact be accurate or erroneous." I conclude by recommending future correspondents on the subject of this great work not to waste your valuable columns by mere inkshed, but to occupy them only with the relation of *original experiments*. I am, Sir, your obedient servant,

D.

Dec. 8, 1842.

UNIFORM SOUNDS IN PERCUSSION.

IN an extract from a recent lecture on percussion, which he has forwarded to us, Dr. C. J. B. Aldis gives an account of a new percussion instrument for investigating the diseases of the chest?—

"Piorry," he observes, "invented the plessimeter, a round piece of ivory, to be placed on the chest, and struck by the fingers, for the purpose of preventing the pain likely to be felt by some persons when the parietes of the chest are percussed. Subsequently a light hammer, having a leathern face, was brought into notice, the ivory plessimeter being struck with it by the right hand. More recently another instrument has been introduced, having a handle attached to the plessimeter, which is struck by a hammer held in the right hand. Now it is very requisite to produce equal sounds in comparing the opposite sides of the chest, for the slightest irregularity in percussing will produce a difference in sound, and even on examining one side of the chest we cannot place much reliance on unequal sounds." In order to insure this advantage Dr. Aldis has constructed a long instrument, of steel, having at one end a piece of thick round leather (the plessimeter), of the diameter of a half-a-crown piece, which may be laid flat on the parts to be percussed, as it moves on a swivel. At the other end of the instrument is a handle, for holding it, with the extremity of a lever (supported by a spring), so placed above the handle that the thumb of

the hand which holds the instrument can, by pressure, work up and down a rapper that falls upon the piece of leather at the other extremity, making loud or gentle uniform sounds, at the will of the auscultator. The instrument is on sale as a "registered" property. It appears to us, from an inspection, to be very well adapted for the use of those persons who cannot percuss the chest satisfactorily with their fingers.

THE SYMPTOMS, TREATMENT, AND AUTOPSY OF THE BLENHEIM-STREET DISPENSARY PATIENT.

To the Editor of THE LANCET.

SIR,—As the autopsy of Adam Elphinstone has now appeared in your columns, permit me to add a few concluding remarks on the subject.

I believe the profession will agree with me that the dead-house of every hospital, as well as the records of private practice, occasionally furnish parallel cases. I need hardly state that chronic diseases sometimes develop themselves in such a manner that the system appears unconscious, if I may so express myself, of their existence, even when the lesions are of great magnitude, like the case in question. Under these circumstances they progress until some other affection manifests itself, which destroys the patient, and the post-mortem examination reveals appearances which were totally unsuspected by the most acute observers.

Let me, then, ask the question, how are we made acquainted with disease, if it be not through deranged function? If the function of an organ is apparently healthy, why are we to suspect that the organ is diseased? I put these questions in order that the chief points in dispute may be kept prominently in view, as your report states that there was "thickening of, and an ulceration in, the stomach." Yet there was no rejection of its contents, or emaciation; for your report adds that "there was no emaciation, or only a very little:" there certainly would have been a great deal had the disease been accompanied by its usual symptoms.

The liver, your report states, weighed nine pounds, and "presented large masses of cancerous deposit, many being in a softened condition;" nevertheless, not until the patient's last two visits, was there the least cause to suspect the liver being implicated. Had the functions of the liver been in any degree seriously deranged, surely there would have been some prominent indications of such being the case, as head-symptoms, or jaundice, added to the œdema and general disturbance; the two latter, in my opinion, having sufficient cause in the heart and lungs; and, again, had the liver and stomach been playing such an important part as your remarks upon the autopsy would lead me to believe, the emaciation would have been great; yet your report adds, "there was no emaciation, or only a very little."

Had I been summoned to the post-mortem inquiry, the lungs and heart might, from my previous knowledge of the case, have undergone a more minute examination.* I am surprised that emphysema was not detected. Possibly, it escaped the notice of the examiner, for its presence was well marked by the external conformation of the chest, as well as by percussion and auscultation. The bronchitic symptoms were, no doubt, removed by my previous treatment.

The report further says, "The heart was flabby, and the cavities were large, and the walls consequently thin." Upon the above statement I beg to remark that the inference, "consequently thin," does not necessarily follow. The frequency of hypertrophy, with dilatation (my diagnosis), in comparison with simple dilatation, averages about twenty cases of the former to one of the latter. For a confirmation of this opinion I refer the writer of the autopsy to the works of Morgagni, Corvisart, Bertin, Laennec, Andral, &c., continental writers, and to Elliotson, Hope, &c., of our own country. The examination of the heart seems to have been very imperfect, as there is no account of the condition of its fleshy columns, the coronary arteries, or the valvular structure, points which would have tended much either to confirm or upset the accuracy of my diagnosis; not forgetting the influence the lapse of five days before the post-mortem examination was made had upon the relative conditions of the walls of the heart as well as its cavities.

Now that I have done with the medical part of the case, I proceed again to defend myself from some insinuations which you have been pleased to append in the way of editorial comments. And first I boldly ask you wherein does the case reveal a tale among thousands? If the publication of the prescriptions was not a malicious and contemptible act, upon what grounds do you consider the publication justifiable or useful, knowing that various remedies besides antimony, infusion of gentian, and hydriodate of potass, are used for various diseases? It would appear that I am not singular in my belief that different diseases can be cured by the same remedies, and as proof I beg to quote your own words, viz., "None of the solutions offered as a reply to the 'Problem in Medicine,' at page 365 of last week's LANCET, corresponded in any respect with the autopsy. They all accord very well as rational deductions of disease under treatment, judged by medicaments prescribed."

Your obed. servant, JOHN HASTINGS, M.D.

Albemarle-street, Dec. 12, 1842.

* Until Dr. Hastings himself stated that the deceased was under *his* care, the author of the prescriptions was unknown.—*L.*

THE LANCET.

London, Saturday, December 17, 1842.

"On the continent they invent, in England they apply." In no respect is the saying more apposite than in medicine. An instance occurs at this moment in an application of Liebig's physiology to the prevention and cure of disease which has this week fallen under our observation, and we promptly notice it in this place, the attention of the profession being eagerly directed towards the new doctrines and principles on which it is based. Thanks to our gifted correspondent, Mr. Ancell, the appetite which exists for an intimate acquaintance with the most important of those principles, is likely to be amply gratified. The application to which we allude has been made by Dr. H. B. Jones, in a work whose title, standing at the foot of this page, we need not here repeat.* A careful examination of the volume has proved to us that Dr. Jones is well acquainted with Liebig's opinions, and with the most recent discoveries in organic chemistry and physiology, and, with honour to him be it said, he has made a practical application of his knowledge without delay.

The work is in two parts; the first contains an account of the nature and treatment of the uric, phosphatic, and oxalic-acid diatheses, and of gout; the second comprises a description of the different varieties of stone, and considers their treatment by internal remedies, and by injection.

Liebig's theory of the production of uric acid is followed almost to the letter. The albuminous and gelatinous tissues furnish the elements of that acid during the progress of those changes which are continually operating as a consequence of the waste and repair of the body. The oxygen of the atmosphere is the active element of its production, and much muscular exertion, and a high respiratory function, with exhausted vital power, promotes its operation, the vital force being an opposing force. These, then, may be regarded as causes of an excessive formation of uric acid, a comparatively insoluble substance; but the further action of oxygen, that of water, and a sufficiently high temperature, converts the insoluble uric acid into soluble compounds, namely, into urea or oxalic acid, or urea and carbonic acid; and in these or similar soluble forms it is thrown out of the system, the oxygen still being by far the most important agent in the operation.

The uric acid diathesis, therefore, or, perhaps, we should rather say, its inconveniences, does not depend so much upon an excessive formation of this acid, as in an absence, or arrest, of those further changes by which it is rendered soluble. Hence, anything that interferes with the due action of oxygen upon the products of the metamorphosed tissues,—whether it be that a sufficient quantity of oxygen is not absorbed, or that a non-azotised diet is persisted in, one that is composed of materials which, received into the blood, directly counteract the agency of oxygen,—tends directly to produce the uric-acid diathesis, with all its disastrous consequences. Dr. Jones's principles of treatment are derived from this view of the case.

Accordingly, to promote the absorption of oxygen is the first indication. That is to be effected by exercise, which must be so regulated as not to exhaust the vital force, for the latter effect would counteract the object that is to be held in view. Sleep, also, must not be excessive, but sufficient to recruit the powers. The best diluent is nitrous-oxide water, and, for the same purpose, iron is strongly recommended, as increasing the red globules of the blood. The latter being the carriers of oxygen, their increase must augment the means of its absorption.

Inasmuch as that non-nitrogenised food

* *On Gravel, Calculus, and Gout; chiefly an Application of Professor Liebig's Physiology to the Prevention and Cure of those Diseases.* By H. Bence Jones, M.A., Cantab., Lic. of the College of Phys., Fellow of the Chemical Society. London: Taylor and Walton. 1842. 8vo, pp. 142.

combines with the inspired oxygen, and has thereby a tendency to prevent the free excretion of uric acid, a second indication of treatment is to diminish the amount of that kind of food, Animal food is accordingly recommended to be used for diet, in preference to farinaceous substances. An exclusively meat diet would be far better than bread alone. But since the process of respiration demands a certain proportion of carbonaceous material, a small quantity of bread is necessary, the quantity of meat being regulated in a great measure by the amount of exercise taken. Potatos and rice are set down as "most inadmissible." Fruits, generally, and apples and pears, in particular, are objectionable. Saccharine and starchy substances, with butter and oleaginous articles, are proscribed, upon the same principles. Thus, the gruel-and-arrow-root system are thrown overboard, and Dr. JONES takes the opportunity of remarking, in anticipation of LIEBIG's promised volume on diet, that "then, for the first time, will it be "in the power of the physician to prescribe a "rational system of diet, which, now, when "the patient possesses observation, is best left "to his own experience." We have often noticed that instructions for diet are frequently dictated by ignorance and quackery. The truth seems to be coming out, and the dieting of ailing persons likely to become part of an exact science.

In the chapter on Gout, Dr. JONES gives the *rationale* of abstinence, exercise, purgatives, alkalies, and water, as remedies, and we find him engaged in explaining the practice that has been sanctioned by experience, according to the *nova principia*. Restriction to a vegetable diet is decidedly erroneous.

The chapter on the Phosphates contains some interesting facts, derived from the author's own experience, and a very clear account of the sources of the phosphates in the blood. A true and a spurious phosphatic diathesis are described. In the latter the conversion of urea into carbonic acid and ammonia is referred to the action of a ferment derived from the mucous coat of the bladder.

On the change of matter in the gelatinous tissues, and those which occur in the uric acid products, Dr. JONES appears to have extended LIEBIG's reasonings, and has made some cautious, and, apparently, judicious statements in confirmation of the German professor's principles, placing the latter rather complicated subject in a clear point of view.

As we have taken up the volume and its principles in this part of our Journal, we shall here also complete our criticism of its contents, and in doing so must find this fault with the work, namely, that it crowds together too many novelties without explanation or discussion. In one chapter, consisting of eight pages only, we find, for instance, LIEBIG's doctrine of the vital force; that of the conversion of worn-out materials into urine and bile; the subject of the consumption of those materials by oxygen gas; the theory of the blood globules being the sole carriers of oxygen; and, finally, that of the *modus operandi* of starch and sugar. Each of these important physiological doctrines—we may say, each of these *novelties*, for novelties they are,—requires at the present moment a particular investigation. True, the author may reply that his object is to create a belief in these views by pointing out their direct application, but the practical men in this country may not be persuaded to change their habits of reasoning all in a moment, and adopt, as rapidly, a *methodus medendi* that is entirely new in principle, on such diseases as gravel, gout, and calculus. A great deal more discussion of the data upon which that method is founded, than Dr. JONES seems to consider necessary to this end, will, judging from the past, be required. We say not so in disparagement of Dr. JONES's labours, for his performance is a very commendable one; but to express an opinion of the tardiness with which change is generally effected in the minds of those who are wedded to preconceived notions; besides which, some of these views of Professor LIEBIG may admit of

modification, as medical science advances. Witness our own pages for objections raised against his theory of the function of the liver. New facts, bringing with them an extension or a qualification of existing theories, are as likely to spring from LIEBIG himself as from any other man. We yield to none in gratification at finding new and improved principles applied to practice, but we wish to see those principles established, in the first place, upon a solid foundation, and, if possible, the rock avoided upon which the predecessors of the present race of medical philosophers have split.

Dr. JONES's experience is derived, we perceive, from within the walls of St. George's Hospital. Really, in these times, it does us good to get a nibble from that quarter, facts from the London hospitals being at present only like crumbs to the needy from rich men's tables. The testimony of one of the physicians of the establishment which we have named, on this subject, is worth repeating, as a *confession*. The writer has long been a scholar of THE LANCET; with what good effect, let our readers here observe:—

"It may be asked from what sources statistical information (in medicine) is to be obtained most easily, and with the greatest degree of certainty? The answer to this would, of course, be—from *the hospitals*, large and small, in various parts of the kingdom. At the same time we are compelled to say that this soil, so excellent in quality, *has been allowed to lie comparatively fallow and unproductive*. Rarely do we see a statistical report *at all* of the cases admitted into a hospital, and, still less frequently, any thing like an *accurate or serviceable one*."

"It is deplorable to reflect on the great mass of information which in these institutions is literally *squandered away*, for the want of a little management and a *little trouble* in collecting it. It is true we have of late seen, now and then, in the public journals, a *solitary report or two* from the medical officer of an infirmary or hospital, and we rejoice at being able to allude *even to these few feeble attempts*, as they show that a feeling is beginning to arise of the propriety, we may *almost* say duty, of those persons who are connected with institutions of this sort collecting and rendering available the scattered materials they present."

"Some such principle as an uniform method of registering cases is *sadly required in the metropolitan hospitals*, for they have perhaps been comparatively *less productive than any others* of information of the sort."

There is no branch of information of which the hospitals might be the best sources, to which these remarks would not equally apply.

While upon the subject of animal chemistry, we shall seize this opportunity of referring to another work which has recently issued from the press of this country, namely, that of Dr. THOMAS THOMSON, of Glasgow.* British chemists owe a debt of gratitude to the veteran philosopher of our northern university for his labours during a long succession of years in every branch of his department of the science, both as an author and as a practical chemist. Dr. THOMSON was the first individual of this or any other country who succeeded in giving a systematic character to the science. His indefatigable industry his accuracy of research, and his correct judgment, have secured to him a reputation which render him an authority upon every question that he investigates, and at the present moment a work from his hand will be consulted with avidity by every one who is interested in the subject. Dr. THOMSON is one of those men in the north who if at any time we have been somewhat sharp with them, as members of the profession, it has rather been because they have known their scientific duties so well that time wasted by them upon university or political intrigue was unpardonable. They were too able in the one to be clever and satisfactory in the other.

The "Animal Chemistry" of this professor was promised in 1838, on the publication of his "Chemistry of Vegetable Bodies," and has from that time been looked for impatiently. It constitutes the last part of the author's "System of Chemistry." Though it contains very little matter which can be strictly called novel, yet we find in it an account of all those discoveries which have lately been established on a solid foundation,

* *The Chemistry of Animal Bodies.* By THOMAS THOMSON, M.D., Regius Professor of Chemistry in the University of Glasgow. London: Longmans. Edin.: Black. 1843. 8vo. pp. 720.

including the analyses of animal substances by CHEVREUL, and by MULDER, SCHERER, LIEBIG, and others of the German school, their enunciation being characterised by that philosophical caution for which the author is proverbial, and which is so essential in a teacher of such a science as chemistry.

If any justification were needed—though, indeed, none is required—for throwing our pages freely open to the exposition and discussion of LIEBIG's remarkable production, —discussed and expounded with such singular vigour and ability by Mr. ANCELL,—it would be found in Dr. THOMSON's work, from the commencement and the termination of which we quote the following passages:—

"When medical men become sensible that the further improvement and final perfection of physiology will depend upon an accurate knowledge of the constituents and properties of animal substances, the subject will speedily draw general attention, which alone is wanting to secure a rapid advance."—Preface, p. 4.

And at page 656, when referring to the living principles, we find these remarks:—

"Neither is the power of this agent over the chemical agents absolute. We may prevent a fractured bone from healing, by giving the patient large quantities of acids."—"Unless the materials for new-wanted substances be supplied by the food, they cannot in many cases be formed at all."—"The canary bird cannot complete her eggs unless she be furnished with lime."

We conclude these observations by recommending this work to the examination of all writers upon subjects that are connected with animal chemistry. They will discover it to be a volume of remarkable utility.

Is this only a libel on Mr. T. CARTWRIGHT and JOHN PROUD, Esq., or really an indication of discreditable and disgraceful facts?

"WOLVERHAMPTON.—The friends and supporters of T. M. Phillips, Esq., entertained that gentleman at dinner, at the Peacock Inn, on Monday last, in commemoration of his recent election to fill the office of coroner. In consequence of the unavoidable absence of Mr. Ryton, Mr. T. Cartwright, a *medical man*, presided. The evening was one of high conviviality. Among the numerous toasts were—"The *senior medical supporter of Mr. Phillips*, John Proud, Esq."—*Staffordshire Examiner*, Dec. 10.

As an appendage to the above, and to our remarks last week, the following may be added, from the same newspaper:—

"INQUISITIONS BEFORE T. M. PHILLIPS, Esq.—On Monday last, at the Greyhound, in this town, on the body of James Horton, an infant, who had expired suddenly in a convulsive fit. *Mr. Talbot Cartwright* gave medical testimony on the occasion. Verdict, 'Died by the *visitation of God*.'—On Thursday, at Deepfields, on the body of Jane Welch, an aged female, subject to attacks of asthma, who had expired suddenly, at an early hour in the morning, having gone to bed in better health than usual. Mr. Kettle, surgeon, was called in to give evidence in this case. Verdict, 'Died by the visitation of God."

"Mr. TALBOT CARTWRIGHT gave *medical* testimony on the occasion," not one word of which testimony could the attorney Coroner have understood. Probably Mr. TALBOT CARTWRIGHT considered, as regards himself, that he acted a discreet part in assisting to place an ignorant judge in the office of Coroner. With Mr. KETTLE's relative position as regards the late candidate we are not acquainted, but neither did Mr. PHILLIPS understand the medical testimony of *that* gentleman sufficiently well to obtain from the jury a verdict consistent with either the facts or common sense.

The *Wolverhampton Chronicle* of Wednesday last, Dec. 14th, contains the following further illustration of the qualifications of the new non-medical coroner for his office:—

"INQUISITION BEFORE T. M. PHILLIPS, Esq., on Saturday, the 10th inst., at Upper Gornall, on the body of Mr. Zachariah Parkes. It appeared from the evidence of Mr. Browne, surgeon, that the deceased had been afflicted some years with an ulcerated leg, and that his death, which took place very suddenly (deceased having, as was his habit, gone to bed after dinner, and been found a corpse in an hour and a half afterwards), was caused by the too sudden absorption of the issue from the leg, which had been caused by the application of dry lint. Verdict, 'Died by the visitation of God.'"

It appeared that the death was caused by the "*too* sudden absorption of *the issue from the leg*, caused by the application of *dry lint!*" Was it, indeed! The medical witnesses must already have formed a good estimate of the coroner as a judge of medical evidence.

CLINICAL INSTRUCTION IN GERMANY.

(From a Correspondent.)

DECEMBER 18TH.—Having completed my studies in two of the chief medical schools of England (University College, London, and the University of Edinburgh), I have revisited Germany, and have, from previous knowledge of the country, and its literary establishments, had a tolerable opportunity of comparing the systems adopted in the two countries. I will not now detail the medical system of education pursued in Germany, but I am very anxious to call the attention of those men who have influence in these matters to the manner in which clinical instruction is conveyed in the German universities. We all know how entirely the student is left to himself in the English hospitals, and, equally well, from dearly bought experience, how much of that time is lost in "walking the hospitals" which might be profitably employed in laying a scientific foundation for practice, and thus insuring for its members a still higher degree of respect than they at present enjoy.

Allow me to observe, *en passant*, that medical students here (generally speaking) *come* to their professional studies much better prepared than they do in the "land of liberty," for, in common with all who aspire to a university degree, they are obliged to present testimonials of their having passed a severe examination in classics, mathematics, history, and modern literature, previous to admission to the university. Their time has not been wasted in an idle or degrading apprenticeship, nor have they the prospect of subsequently losing caste by vending drugs, or of being open to the imputation of overdosing for the sake of a few paltry fees. The first year-and-a-half, or two years, are generally spent in attending theoretical lectures on the different branches connected with medicine, and *then* they take out their ticket for the hospital. But that is scarcely the proper expression, for even at that time they do not acquire permission to roam about the different wards, but, by feeing one of the professors, they obtain the right of attending *his* clinique, and of preparing themselves to enter into active service in the term following.

During the first session that a German student attends to clinical instruction, he is termed "auscultant," as he usually listens to the remarks of the professor, and to the examinations of the more advanced students. He then becomes *prakticant*. Each *prakticant*, or practising student, takes a patient in his turn. He is expected to write out a clear history of the case, to give the *anamnesis* and the diagnosis, and his opinion with regard to the prognosis and the treatment. This is read in the presence of the professor and his fellow-students, and commented upon. The professor delivers his opinion, and seizes every opportunity of examining the *prakticant*, and putting his knowledge to the test. The latter is expected to watch the patient, and to report progress every day. Thus it is impossible that the industrious student should escape notice, and highly probable that many will be excited to laudable emulation who otherwise might sink into apathy, or feel bewildered in the maze of pathological difficulties. In some *cliniques* the student does not see the patient until he is brought into the clinical theatre, as is mostly the case, for instance, in *Dieffenbach's* course.

As I have mentioned the name of Dieffenbach, allow me to illustrate what I have said by an instance, taken from everyday occurrences. A man is brought in with a large ulcerated tumour of the elbow-joint; the *prakticant* is told to examine it, and to give his opinion without asking any questions of the patient. His diagnosis, say, is incorrect, and Dieffenbach naturally asks the symptoms of the different tumours of the joints. After thus fixing the diagnosis, the patient is sent out of the room, and the mode of treatment is discussed—Why, for instance, is internal treatment useless; what operations can be performed; why is the preference to be given to amputation or excision, as the case may be?

By this system of instruction the student gradually acquires the tact and self-command that are necessary to him in independent practice; but there still remain some intermediate degrees to the attainment of that end. In the Poliklinck (nódes town), which is equally under the superintendence of a professor, more is already left to the discretion of the student. The patients are the poor of the town, who merely receive advice gratis, but generally pay for their own medicine, unless the establishment is wealthy enough to defray the expense. The student attends the patient at his own house, and,

according to the degree of confidence placed in him by the professor, is more or less at liberty to follow his own counsel. In some towns, e.g., in Kiel, the prescription ordered by a student of the Poliklinck is invariably made up by the apothecary, whereas, in other universities, a counter-signature of the superintendent is required.

Compare this system, for a moment, with our *dispensary* practice. How obvious is the advantage of the former! for whilst here the previous knowledge of the student is brought to bear in a regulated and safe manner, there, for the most part, the student listens to the dictates of a young "apothecary," whose knowledge is most probably in an inverse ratio to the patronage that was necessary to procure the situation, or, if he be fortunate enough to catch an occasional glimpse of the consulting physician, it is only to remind him that *he*, too, may one day, roll along in a well-built carriage, and give oracular responses to the "tiresome" questions of the inquisitive juveniles.

I make these remarks only after having had an opportunity of comparing the French schools with those of Germany, and after having thus convinced myself how much more information the *student* may derive in the latter than in the former. I advisedly say the *student*. The finished surgeon, or physician, who has some *spécialité* at heart, or who, from the sound foundation already completed, is able to derive benefit from a cursory glance at the vast hospitals of France, cannot do better than visit Paris, but he who still feels the necessity of being guided, and of submitting his judgment to the matured wisdom of experienced men, will undoubtedly do better in devoting his spare time to one of the German universities.

Deformities of the Spine and Chest successfully Treated, &c. By CHARLES ROGERS HARRISON, M.R.C.S. London: Churchill. 1843. 8vo, pp. 104.

A Treatise on Irritation of the Spinal Nerves as the Source of Nervousness, Indigestion, &c. By J. EVANS RIADORE, M.D., F.L.S., &c. London: Churchill. 1842. 8vo, pp. 366.

THE first of these works is a compendium upon the nature and treatment of spinal diseases. After treating of the spine and its adjoining parts, the thorax, and the various structures connected therewith, in their normal healthy state, the author examines the kinds and causes of their deviation from that condition. His remarks on this head, if properly studied, as they should be, by mothers and the heads of families, would introduce a much better system in the management of infants and children than at present prevails. The use of leading-strings, go-carts, and such contrivances, although they enable persons having the charge of infants to relieve themselves for awhile from the burden, are stated to be continually productive of inequality in height of the shoulders, of spinal distortion, narrowing of the chest, &c. The relative frequency of right and left lateral curvature, and the respective liability of the sexes thereto, are next discussed, as well as the influence of clothing on spinal deviations, the author waging "war to *the knife*" against the practice of tight-lacing, and exhibiting a frightful list of diseases (pp. 65 to 68) produced by compression from stays. It is strange, indeed, that such barbarism as tight stays for *young* women, at any rate,—worthy of being compared only with the means employed by the Chinese for insuring small feet,—should so long have prevailed in the civilised world, notwithstanding the palpable rebuke afforded by those Grecian and other statues which are acknowledged to present the highest impersonations of female beauty. Mr. Harrison endeavours to strike at the root of the evil by appealing to persons who possess a natural authority over the young. "All stay-makers," he says, "leave the stays sufficiently narrow to admit of their being drawn by far too tight either for health or beauty. Parents should see to this; *the stay-makers will not*, for fear of offending their young customers."

In detailing the causes of spinal distortion as they are dependent on habits of various kinds, Mr. Harrison remarks, that positions required to be assumed in taking lessons on the harp, the piano, and even in writing, drawing, needlework, &c., although not necessarily tending to deform, —for execution in all of them, is best effected in easy and natural postures,—yet frequently become causes of spinal curvature, from the bad attitudes in which they are pursued; and he naturally suggests that to prevent these ill-tendencies judicious teachers should always be preferred. The forcing of children to premature intellectual or physical labour, to the exclusion of the

education of the body itself, out of doors, is deservedly reproved; and the very inferior development of the frame in the manufacturing districts, as well as the greater tendency of young females than males to spinal distortion, are mainly attributed by the author to this evil. A chapter is devoted to indicating the consequences of curvatures of the spine in their effects on the viscera, &c., (but these are not fully dilated on), and the various treatment of spinal deformities will be found enumerated. As prophylactic means the author praises the practice recommended in Mr. Donald Walker's "Ladies' Exercises" and "Manly Exercises," to an exposition of which considerable space is given, not with much judgment; and the same may be said with regard to the preliminary chapters, so much of which is to be found in ordinary anatomical works, though here and there, to be sure, something new is elicited. The book is written in a plain style, as it should be, and the illustrations, of which there are about forty, are for the most part well drawn outlines.

The work of Dr. Riadore is something like a corollary to the foregoing, inasmuch as the diseases of which it treats are, in numerous instances, consequent on spinal distortion. It is a learned compendium of the protean diseases arising out of spinal irritation, a cause which the author, like some others who have preceded him, shows, has been much neglected in the diagnosis of visceral derangements. After taking a general view of the various symptoms which ensue from morbid action as it occurs in the several divisions of the spinal canal, Dr. Riadore states that in nervous disorders generally, in hysteria, indigestion, and numerous other diseases, the symptoms which have been hitherto commonly referred to disturbances in the functions of the viscera only, are, in part at least, due to those occurring in the spinal cord and its membranes. The most original and useful portion of the work is that which discusses the particular treatment that should be adopted in the different temperaments. This, and the especial tendencies to disease attaching to them, are described in a satisfactory manner. Dr. Riadore attacks, with some success, "the slavish rules and formularies of modern gastronomists," enlisting himself actively on the side of able cookery and a generous diet, as favourable to staunch and enduring health; and he advantageously contrasts the longevity, superior, strength and powers of endurance of the civilised man, which are consequent on an abundant and regular supply of food, with the inferiority, in these respects, of the savage, whose insufficient and uncertain nourishment is inseparable from his mode of life. Dr. Riadore's treatment of the various forms of spinal irritation is indicated in about twenty cases, which deserve perusal. The relative merits of electricity, strychnine, and alkaline medicines, opium, &c., as remedies in nervous affections, chlorosis, spasmodic stricture, indigestion, and inflammations, are canvassed, and the whole is closed by a treatise on the utility of water as a remedial agent. Much labour has manifestly been bestowed on the composition of this book, which contains a good deal of general information; but the author has sometimes admitted irrelevant matter, and in one place has rather unscientifically assumed as a "fact" what as yet can only be regarded as a high probability, namely, the identity of voltaic electricity with the vital force. (Page 129.) An awkward defect is observable in the omission of heads to the chapters, with the contents, though these are to be found in the index, and the printer has left too many typographical errors. However, we can conscientiously recommend the work for its own merits.

DISCOVERY OF SPERMATOZOA WITHIN THE MAMMIFEROUS OVUM.

We understand that at the meeting of the Royal Society on the 8th instant, a paper by Dr. Martin Barry was read, announcing his discovery of spermatozoa *within the mammiferous ovum*. The ova were those of the rabbit, taken, twenty-four hours *post coitum*, from the Fallopian tube.

THE BAT CLUB.

A full meeting of the "business-committee" took place on Wednesday evening last, when it was determined, after a brief discussion, that the next assembly of the club should be held on Wednesday se'nnight, and a resolution was passed, unanimously, that it was desirable that the whole question of medical reform should now be brought before the club, with a view to the fullest consideration of the subject, and that Drs. Webster and Hastings, the presidents of the two leading medical associations, should be invited to attend, for the purpose of disclosing the plans

of medical reform of the associations to which they respectively belong, thus bringing the whole matter before the club. Sir BENJAMIN BRODIE was of opinion that the scheme proposed by Sir JAMES GRAHAM was sufficient for their consideration, and he thought it would be unwise to go into any other, but he was without a single supporter in the meeting, and, ultimately, a resolution, to the effect above stated, was carried, without a dissentient voice. Students are not to be permitted to attend the next meeting, but members are to be allowed to introduce the ordinary number of visitors.

BRITISH MEDICAL ASSOCIATION.

EXETER-HALL, Dec. 6.—MEETING OF COUNCIL.—Dr. A. B. GRANVILLE, having been called to the chair, said, that that being the first assembling of the new council, they had to elect the president, vice-presidents, and secretary, after which Dr. Geo. Webster, Dulwich, was unanimously re-elected president, and the following gentlemen were elected vice-presidents, for the ensuing year:—Dr. A. B. Granville, Dr. M. Hall, R. Davidson, Esq., Jos. Howell, Esq., R. D. Grainger, Esq., Geo. Bottomley, Esq. (Croydon). C. H. R. Harrison, Esq., was then unanimously re-elected secretary for the same period.

The Reform Committee, the Finance Committee, and the Benevolent-Purpose Committee were then re-elected. Two pounds were then voted from the benevolent fund to a distressed medical man, and one of the committee being appointed to see to its appropriation, the meeting was adjourned.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

THE TOPHAM-AND-WARD PAPER.

DEC. 13, 1842.—There was again a crowded meeting this evening, Dr. WILLIAMS, president, in the chair. Immediately after the reading of the minutes,

Dr. GREGORY begged to inquire if a party reading a paper before that society was justified in publishing it entire within forty-eight hours afterwards? He had understood that it was a rule for such a paper to be left with the council for their judgment upon it, with reference to its publication. (Hear, hear.) Yet the paper read at the last meeting was published within forty-eight hours of its discussion.

Dr. JOHNSON: Why, it was printed and published before it was read here. (Hear, hear, and laughter.)

Dr. COPLAND would, if it were worth while, move that the paper should not even be mentioned in the minutes, that all trace of its having been read in the society should be obliterated from their records. It ought not to have been read there at all, one rule being that the papers read be on some branch of medicine, the paper in question not being one which could be called medical, or written by a medical man. Therefore it should not have been read. Besides, the subject could not be debated off-hand. It required consideration in a different way. Another circumstance had placed the authors out of court. They had broken faith with the society, and published the paper at once, as if under the society's sanction, in order to obtain for it an undue popularity. As for its merits, they amounted to nothing, for even if mesmerism could effect all that its disciples wished, he questioned if it would be serviceable for——

Mr. PERRY rose to order; the speaker must confine himself to the question whether all mention of the paper should be erased from the minute-book.

Dr. COPLAND surely must give his reasons for introducing his motion; he was saying that he questioned even if mesmerism were true, whether it would be useful as an agent, for pain was a valuable auxiliary in——

Mr. SYME rose to order on the same ground as Mr. Perry.

The PRESIDENT did not see how the society could canvass the merits of a paper for which they had already (at the last meeting) returned thanks to the author.

Dr. COPLAND would at once move that no part of the minutes which referred to the paper be confirmed. (Hear hear.)

Dr. EVANS seconded the motion.

Dr. MOORE regretted its necessity, supporting it with much pain on some grounds, but with much pleasure on others. It was painful, as a reprobation of the council for allowing a paper to be read, of which, being altogether unworthy of the society, all mention should be avoided in the minutes. But for raising discord in the society, he would at the last meeting have taken a vote on the propriety of reading it; putting its merits aside, however, the authors had directly violated the laws and usages of the society. Notwithstanding the dictum of the secretary that it was disorderly to discuss the merits, and the opinion of the president respecting the thanks, it was sometimes necessary that discussions should extend to second evenings. Yet, how would the character of that medical society be affected which would receive and discuss a subject like mesmerism when no shadow of proof existed as to its truth?

Mr. PERRY: My "dictum" was an appeal to the president. I do think that the discussion should be confined to the confirmation of the minutes.

Dr. MOORE would bow to the chair, and to that only; but surely reasons might be offered for supporting a motion.

Dr. Williams: Leave the merits of the paper. The authors should not have published it.

Mr. Drew: Will the non-confirmation of the minutes abate the truth of the record?

Mr. Quain: Is there any law to punish those who publish papers read before the society? Are the minutes a statement of facts?

Mr. Davies: The council should be left to decide on the publication. Elsewhere, when papers are published by their authors, they are refused admission into the volume of "Transactions."

Mr. Syme: May not a paper be withdrawn from the society when its author is not a "Fellow."

Dr. Merriman: A man's common sense should tell him that such paper ought not to be thus published. For my part, I consider the present publication was a gross insult to the society. (Hear, hear.) I support Dr. Copland's motion.

Mr. Quain: Can you abolish the fact that the paper has been read here?

The President: In all assemblies it is competent to expunge minutes before confirmation.

Mr. Perry vindicated the council. Many papers in the "Transactions" were not by medical men: he reprobated the authors of the paper for withdrawing it, under the plea that they did not wish it published, when, in fact, it was already published. As a member of council, had he known it was in the press, he would have voted against its perusal in the society.

Dr. Webster: As they withdrew the paper, let us erase all record of it from the minutes.

Dr. Roots: Shall the minutes be confirmed or not?

Dr. Copland was not hostile to the council, whose members he much respected, but he acted now upon principle. Would the society pocket the affront offered by the authors of the paper?

Mr. Wood, as their friend, would state that in its publication they acted in ignorance of the laws.

Mr. B. Cooper thought the society should be grateful to the council for allowing the paper to be read; it could not have come before a better tribunal to be battered to pieces. (Hear, hear, and laughter.)

Dr. Addison would not vote a censure upon its authors, but would vote for the non-confirmation.

Mr. C. Hawkins supported Dr. Copland.

Dr. Gregory: The minutes should remain out of respect to the council, but the society should express its regret respecting the publication, and publish the resolution in the morning papers.

While Dr. Copland's motion was being supported by Dr. Mayo, who added some remarks against mesmerism, the cry of "question" arose, whereupon the motion was put, and "a forest" of hands held up for it. On the contrary, apparently *five*. Much cheering ensued, after which a paper was read on lithotomy, followed by an interesting discussion, which we may be able to publish next week.

DR. DEHANE'S HISTORY OF THE ELECTION FOR CORONER IN STAFFORDSHIRE.

To the Editor of The Lancet.

Sir,—In defence of my own character I am reluctantly obliged to answer certain statements contained in last week's number of your periodical. Those statements being anonymous, I should not have thought them worthy of any rejoinder, were it not that they appear to have had sufficient influence to possess you with a highly unfavourable view of my conduct and motives in the late contested election for the coronership of the county of Stafford. Anonymous attacks on the character of an individual are, under all circumstances, unmanly and dishonourable, and bear on their face a conscious want of rectitude in the aggressor. I must add, that your three correspondents who have assailed me in The Lancet, have not only been guilty of an anonymous and unfounded accusation, but, under existing circumstances, have laid themselves open to the suspicion of assuming the insignia of a profession to which they do not belong. What if they should turn out not to be medical men at all, but pettifogging attorneys, or attorney's clerks? If such suspicion be ill-founded, the best way of clearing up all doubts will be by the parties publishing their names and addresses.*

But now, Sir, for the facts of the case. I entered on a contest for the place of coroner of the county of Stafford, in opposition to certain members of the legal profession, thereby asserting the principle that a coroner ought, *cæteris paribus*, to be of the medical rather than of the legal profession. At an advanced stage of the contest I found, unexpectedly, opposed to me an almost universal coalition of the lawyers, resolved at all events, and at whatever expense, to prevent my election; in illustration of which fact I may mention that one of their number is understood to have contributed five hundred pounds towards the expenses of the election, and that all were expected to give their professional services gratuitously. On my own side of the question, though my warmest thanks were due to many of my brethren for their individual exertions, I perceived not

* Dr. Dehane might like the parties to publish their names, but the writers were certainly members of his own profession.—*L.*

the smallest indication of general and efficient support on professional grounds, or of that pecuniary assistance which might have been looked for in a matter of universal interest to the profession.

I was strenuously advised by my friends, including several respected and influential magistrates, to give up the contest as one which would be productive of much personal ill-will and public disturbance, with ruinous expense to myself and the absolute certainty of defeat. The matter, therefore, came simply to this. Was I to retire, or was I, individually, single-handed, and with no pecuniary resources but my own, to maintain an abstract principle, without the possibility of personal success or advantage, against a powerful combination of the legal profession, who had united hand and purse to attain their object? I put it to your common sense, Sir, whether I should not have been insane to have acted otherwise than I did.

But I am told that I should have withdrawn in time to allow some other medical candidate to enter the lists. This objection to my conduct seems plausible, yet it arises either from personal malice or entire ignorance of the circumstances of the case; for all who are acquainted with those circumstances well know that, within less than half an hour of the reading of the writ, I was utterly unaware of the powerful organisation of the opposing party, and the hopelessness of my own cause. When the truth was forced upon me, at the urgent instance of my friends, I consented that they should conclude an arrangement, which, being made, involved nothing more in my favour than what was meant as an indemnification for the expenses I had actually incurred, it being my intention to devote any surplus that may be found to exist, to the purpose of promoting the election of the next eligible medical candidate for the office of coroner. Let this serve for an answer to the insinuations of my anonymous traducers with regard to my having been bought off.

I have to add, that whatever political feeling mingled in the contest, originated with my adversaries, and was by them carried to the most absurd and unjustifiable excess. For my own part, I am wholly unable to perceive what light can be thrown on the cause of a man's death by the question whether he who presides at the inquiry be a Tory, a Whig, or a Radical. This question, however, may possibly have weight with such wiseacres as your correspondent "D.," who associates the transactions of the late election with the singularly germane facts that the last combustion of a heretic, and of a witch, took place in Staffordshire!

Finally, Sir, should you think proper to subject this affair to a thorough investigation, I have no doubt you will be led to a conclusion very different from that which the misrepresentations of anonymous and cowardly scribblers have prompted. I cannot avoid observing further, that the designation of my motives in the columns of THE LANCET as "less those of a mere poltroon than of one who was destitute of all correct principle in the regulation of his actions," would require more particular notice if it were more explicit. As the matter stands, I will content myself with recommending the writer of the article, whenever he feels inclined to apply the epithet "poltroon," to do so not by inuendo, but directly, unequivocally, and with the addition of his name. Otherwise he will inevitably incur the charge of being a poltroon himself.* I am, Sir, your obedient servant,

J. DEHANE, M,D.

Dec. 14, 1842.

WESTMINSTER HOSPITAL.

DR. BURNE is about to resign his appointment of junior physician to the Westminster Hospital, fishing in Devonshire being pleasanter than physicking in London. It is to be hoped he will continue to be one of our "constant subscribers" in the country, that in half a dozen years he may know the difference in medicine and medical government in the time of the sloths, whose company he leaves, and in that of their successors, whose reign he is not likely to share.

Early in September last, when Dr. BURNE had made up his mind to retire, his intention was communicated only to a Dr. NUGENT KINGSTON, a *genteel* "connection" of Dr. CHAMBERS, with whom he entered into pecuniary negociation for the lease of his house and furniture in Lower Brook-street, the sale of which was concluded without difficulty, excepting as to a certain kitchen-range, the price of which Dr. KINGSTON at first thought too high, subsequently, however, coming up to Dr. BURNE's terms; whereupon Dr. BURNE went to the Westminster Hospital, and "made" a batch of governors there on behalf of Dr. KINGSTON, which said batch might have been forthwith scheduled among the goods and chattels sold to

* The sentence in question is not correctly, because not fully, quoted by Dr. Dehane, whose resignation, however, certainly was not distinguished by the quality of courage, in either of two respects:—first, in that of completing the contest which he had begun; and, secondly, in announcing one reason for his retirement on Dec. the 1st (See Dr. Dehane's letter, page 399), and another on Dec. the 14th, each put forth, apparently, as the real and only cause.—*L.*

Dr. KINGSTON. The date of creation (of the governors) was the 24th of September, twelve days after the house and furniture had been paid for, and Dr. KINGSTON, on the 16th of September, with great pluck, himself made at once as many as he believed would frustrate all competition. The plot thus far was confined to Drs. BURNE and KINGSTON, excepting that the latter began a most active canvass (meant to be secret) among the *out* governors, and, being backed by the notorious place-hucksterers of St. George's Hospital, obtained many promises. At this period Dr. BURNE made a confidant of Dr. HAMILTON ROE, who immediately drove to Wimpole-street, and there unfolded the whole scheme to Dr. CLENDINNING, who instantly took a cab to the hospital, ordered the coachman to "drive fast," and in the twinkling of an eye made fifty more governors.

Up to this point no suspicion was entertained by any foreign parties that Dr. BURNE was about to retire. The vote-making, however, had startled some of the expectants of hospital appointments, and, among others, the ex-president of the College of Surgeons, who, fearing that some plot was a-foot to march his son CHARLES to the right-about, though not being able to discover why, in mere "self-defence," as he says, popped a hundred and odd pounds (say 125*l.*) into his pocket-book, and handed the amount over—this "greatest medical reformer of the age" handed, we say, the amount over—to Mr. WILSON, the hospital secretary, at the same time naming a number of persons as the governors who thus generously helped to swell the ranks of those charitable gentlemen to whom the newspapers occasionally direct attention as an honour to the country, for their benevolence. When, after the lapse of a few weeks, Mr. GUTHRIE, the "great medical reformer," discovered the true direction of the mysterious movements, his indignation at this waste of powder and shot may "be more easily conceived than described." Mr. CHARLES, too, believed, that *he* could have done something much more pleasurable with "such a lot of money."

Having felt his way by this time with some success, Dr. KINGSTON in November commenced a more open canvass, and then, too, rumours of Dr. BURNE's retirement became current. Then, also (on the 29th of November) the committee of the Westminster Hospital became acquainted, for the first time, with the fact; and at a board meeting held on the same day, Dr. KINGSTON, to the astonished assembly, confessed the part he had taken in the play. The board was indignant, and denounced the proceeding as an attempt to "sell" an "important office" in their institution, and thereupon passed a strong resolution condemnatory of the whole affair, at the same time expressing a desire to recommend Dr. BASHAM to fill the expected vacancy, on the grounds of his long connection with the institution, and the many services he had rendered it. The resolution embodying these views was signed by twenty-nine governors, headed by the treasurer and the senior surgeon. The active genius of Dr. ROE soon found a counterpoise to this proceeding. In two hours after the document was signed he was in the western corner of Manchester-square, closeted with Dr. BRIGHT, who holds the title of "senior physician" to the hospital, but spends one half of the year in visiting lunatic asylums, and the other in farming-experiments in Derbyshire. The eloquence of the "angel," or the "evangelist," or the "apostle," or whatever his rank amongst the "Irvingites," may be, soon brought "easy John" over to his views, and on that evening there was posted to each governor of the hospital a printed copy of a resolution warmly recommending Dr. KINGSTON as physician to the institution.*

A meeting of the board of governors was held on Tuesday, the 5th of December, and thereat Dr. BURNE appeared with the copy of the agreement between himself and Dr. KINGSTON, saying, for himself, that he regretted that the circumstances relating thereto were mentioned at the previous board, and declaring that *he* would answer no questions that were put to him on the subject, with which determination he then left the room. He was requested, however, to return by Colonel SHORT, who inquired if he would favour the board by stating whether he had, on the first negociation with Dr. KINGSTON, mentioned his intention of resigning. Dr.

* "TO THE GOVERNORS OF THE WESTMINSTER HOSPITAL.—We, the undersigned physicians of the Westminster Hospital, unanimously recommend Dr. Nugent Kingston, member of the Royal College of Physicians, for the office of physician to that institution, which will shortly become vacant.—J. Bright, Hamilton Roe, John Burne.—London, Nov. 30, 1842."

Burne replied, that Dr. Kingston could draw his own inferences on the subject, but that no extra or express money was paid to him (Dr. B.), excepting for the kitchen-range, as aforesaid. Dr. Burne then made his retreat, refusing to say when he should resign. The board thereupon immediately passed the following resolution, namely,—

"That this committee view with deep regret and reprobation the system which has been lately adopted of making votes for the purpose of the contemplated election of physician, particularly with reference to the conduct of the retiring physician, Dr. Burne, in making a communication to a candidate, which he withheld from the committee, who deem it to be their duty to recommend to the next general meeting of the governors, to make the ensuing appointment of physician durable for one year only."

The rule of the Westminster Hospital is, that no governor shall vote who is of less than three months' standing. This fact supplies a reason for the delays in giving publicity to the projected resignation of a medical officer of the institution.

TITLES OF "ESQUIRE" AND "DOCTOR."

To the Editor.—Sir: In answer to your correspondent at the end of The Lancet of Nov. 19th, I offer the following quotations:—1. "The doctorate, or highest degree in the academies, is, in point of rank, analogous to knighthood, and with us is classed next to it." 2. "The title Esquire is applied to magistrates of considerable districts, to counsellors or advocates, clerks to her Majesty's signet in Scotland, considerable merchants and traders, and to persons of fortune and reputation in general." 3. "The title Gentleman is considered as applicable to magistrates of inferior districts, to such professors in universities as are not doctors or esquires, to the inferior clergy, and to *other respectable members of the learned professions*, to respectable citizens, and other persons, of whatever description, whose character and situation in life are held suitable to the state or condition of a gentleman." (*Brydson.*) 4. "Esquires and gentlemen are only names of worship, not of dignity." (*Sir Ed. Coke.*) 5. "With us the degree of doctor, in any of the faculties, together with that of serjeant-at-law, has always been held superior to the rank or degree of esquire, and next to the honour of knighthood." (See *Blackstone's Commentaries.* — "Precedency.") 6. *La Roque* says, "that at the council of Basle, 1431, the Emperor Sigismond ordained that doctors should precede knights."

Your obedient servant,

T. H.

Bury, Nov. 24, 1842.

FROM DR. M. HALL.

To the Editor.—Sir: Observing an advertisement on the cover of the last number of your journal relative to the publication of my lectures, I think it proper to make the following statement:—A person, calling himself a short-hand writer, called upon me a few days before the commencement of my lectures at St. Thomas's, to say that it was his "intention" to take down my lectures for publication, adding, that as he was not versed in medical terms, it would be a service to *him* if I would correct any verbal errors in his MS. I replied that I had no objection to do so, preferring that my lectures, if published at all, should be published correctly. When I read over the notes of the first lecture I found them so incorrect that it became necessary to re-write them. This, too, from the same motive, I was also ready to do, time being given. But, having consented to correct my lectures for correctness' sake, I did not expect that the matter was to be made public, as if I had entered into a spontaneous arrangement with the Editor. I beg to add, that on seeing the advertisement on the cover of your journal, I immediately addressed a note, withdrawing any co-operation whatever in this matter. I am, Sir, your obedient servant,

Marshall Hall.

Manchester-square, Dec. 10, 1842.

LILLIPUTIAN DIAGNOSIS.

Our French neighbours profess to have arrived at a nice pitch of diagnostic acumen. In the report of a case occurring at La Pitie, we are seriously told,—"Les acces febriles simulant des accès de fièvre intermittente, et resistant à l'emploi du sulfate de quinine, le hoquet, l'ictere, les doleurs de l'hypochondre droit, *l'absence de lesions dans tout autre point du corps*, et le volume à peu pres normal de la rate font porter le diagnostic de *phlébite hepatique.*" To detect so obscure a disease as inflammation of the hepatic veins, from so meagre a set of symptoms as those enumerated above is clever indeed. Assuredly, when the observers had determined that no disease existed anywhere else, as they say, they had a right to enlist hepatic phlebitis. But the curiosity of the case is, that the case turned out precisely as was prognosticated. The patient died, and the disease that killed him was really found to be an inflammation of the vena porta, brought on by the presence of a fish-bone, or some other foreign body. But in diagnosing this report ourselves, we strongly suspect that the *safest* way to diagnose an obscure disease is—*after the autopsy.*

LOVE OF SPIRITS IN THE NAVY.

THE crews of men-of-war are remarkably ingenious in their attempts to procure an excess of spirituous liquors on board ship. Their success is not detected by drunkenness alone, but partly by the number of bowel complaints, notwithstanding every vigilance against the prohibited gratification. This unfortunate propensity forms the leading evil which the medical officers have to avert. An amusing instance of unwillingness to admit the ill effects of their favourite habits occurred to me (says Mr. James Prior, in the "Edinburgh Journal" for October) a few days ago. A fine young seaman presented himself for examination preparatory to entering a vessel fitting out here (Woolwich). He had come recently from China. He had suffered there from dysentery for a week, but had long perfectly recovered. I inquired to what he attributed the general illness at Chusan? "To the water, Sir." "And something to the grog, I suppose?" "Why no, Sir, the grog was not bad." "Did you drink much of it? "Not a great deal, Sir," "The *Shamsoo* had something to do with it?" "Sir, I should think not, for the Royal Irish drank like devils, and they got off pretty well; while the Cameronians did not take so much, and they died very fast."

SIX YEARS DUODENAL DISEASE.

A CONTEMPORARY French periodical reports the case of a patient who, for the last six years of his life, was frequently subject to hæmatemesis and other affections of the stomach, and who latterly experienced such an augmentation of sensibility in the epigastrium that he could not even bear the weight of his night-shirt thereon, and lying on his back was, on this and other accounts, insupportable. For the three months preceding death nourishment was afforded solely by injections, no substance passing downwards beyond the stomach. On the post-mortem examination an extensive ulceration was discovered in the duodenum, eroding the muscular coat, and reducing the intestine almost to the tenuity of a serous membrane. The serous coat of this part of the alimentary canal was, in fact, so thin and fragile, that it became torn by merely being drawn out of its place. The mucous membrane also presented many solutions of continuity, and was of a brownish colour, and softened in the whole extent of the duodenum. Along almost the whole extent of the ulcerated surface the intestine was lined with fibrinous cords, similar to the columnæ carneæ of the heart. The stomach was healthy, but the liver atrophied, and of a dark coffee-colour.

ST. THOMAS'S HOSPITAL, Dec. 15th.—An evening conversazione is to be held on Friday, the 16th of Dec., at eight o'clock, when some original observations regarding the extent and relative position of the thoratic and abdominal viscera in health and disease, by Francis Sibson, are to be communicated by Dr. Hodgkin; Mr. Samuel Solly is to detail a remarkable case of mollities ossium, illustrated by drawings and microscopic preparations; and other objects are also to be submitted to the meeting. (Tea and coffee.)

Mr. JOHN HARRISON, of Charles-street, offers himself to the governors of the Middlesex (some of whose "best men," he observes, have "hitherto" been furnished from other hospitals) as a candidate for the vacant assistant-surgeonship of that institution, and, at the same time, advertises St. Georges's Hospital, at Hyde Park-corner, as "undoubtedly the first and foremost medical and surgical school in this metropolis." The teachers at the other hospitals, forgiving his impudence, would like to be furnished with *his proofs*.

ROYAL COLLEGE OF SURGEONS IN LONDON.

LIST of gentlemen admitted members on Friday, Dec. 9, 1842, J. Robinson, B. A. Smith, P. P. Travers, R. Haynes, H. Adkins, T. G. Beale, G. Pycroft, T. Jones, E. Empson, T. G. Gurdon, H. J. Sanderson.

CORRESPONDENTS.

Junius would reprimand what he terms that "system of puffing" in Dublin which consists in continuing to advertise, in the newspapers, medical lectures, long after a great part has been given of the courses, which should be heard in totality, or are not likely to be attended to or heard at all. The repeated announcement of the lecturers' names in public is supposed, he conjectures, to lead to profitable private practice. *Junius* cites varieties of this species of advertising, all of them as reprehensible, and at the same time refers to some others, such as notices that at certain hours the advertisers may be consulted on cases of club-foot, disease of the eye, and so forth; with occasional declarations in some medical journal that the parties are libelled by any one who says that their cures are less than 80 per cent; this form of "affidavit" then getting into the newspapers. One such gentleman, *Junius* says, has begun to hang cards of himself, in gilt frames, over the chimney pieces of the capital,—the proper sites, however, of puffing and smoke. *Junius* desires to know if it would not be as creditable for respectable surgeons to announce their willingness to be consulted at specific times on *hernia* or *fever*, as it is common already to say "club-foot" or "diseases of the eye?" And, also, whether six months at home, and a summer trip on the continent, ought to be considered as sufficient grounds for demanding the confidence of the public in medical affairs, because that is often about the

amount of time devoted to obtaining experience in the diseases in question by such advertisers as he has named. (The necessity for such inquiries is to be regretted.)

Great complaints are made to us by medical students of mal-attendance on the part of the physicians and surgeons at the hospitals in Dublin. Let us have authenticated particulars relating to the days, hours, and minutes, when those gentlemen *ought* to arrive to fulfil their duties, and when they *do* arrive. Nothing *general* will do. We say *minutes*, because, to pupils, irregularities even in that small respect, have been made by the teachers themselves, in parcelling out the courses and hours, important items in the horology of the week.

A recent number of the *Londonderry Journal* contains an announcement from the guardians of the Gortin Union that they are in want of medical men to vaccinate in thirteen divisions of that union, at a remuneration of sixpence for each successful case. "How low," asks a correspondent, "has the profession sunk in the sister island to be insulted with such proposals? In my own neighbourhood we think we are sufficiently ground down in being obliged to vaccinate at two shillings for each successful case; but that any respectable surgeon should accept of sixpence as *a remuneration* for the operation and subsequent inspection of its effect, is surely not within the bounds of probability. The present race of practitioners in Ireland are well educated, both professionally and otherwise, and I trust that they spurn such offers from the poor-law commissioners."

Presuming *Mr. Jackson's* note of the 10th inst. not to be intended for publication, we do not print it; indeed, its insertion is not necessary, for no person, neither *Amicus Veritatis*, nor any other gentleman, could have ascribed to the remark in question the slightest offensive intention. The present note of Mr. J. only confirms the obvious fact that the expression was used in a humourous and not violent sense. It was, however, quoted *verbatim*. Regard shall be paid to his concluding suggestion.

Sir,—I have been a general practitioner of medicine since the year 1820, though not a member of the College. But I am a licentiate of the Apothecaries' Company. Last week I summoned a person to the Court of Requests for payment of sundry visits, attendance in the night, and medicine. The gentleman presiding as judge of the court informed me that I could only charge for medicine, and stated that according to the Act of the College of Surgeons I could not obtain any remuneration for visits, &c., although this was a medical case (delirium tremens), as I was not in practice previous to the year 1815. I am not aware that any Act of Parliament was in the least altered at that period, and as the case is not finally decided, will you be kind enough to let me have the advantage of your superior judgment on the subject?

*** As our corresponsdent has got such a noodle of a judge to apply to in the Court of Requests, he has no remedy against the patient but that which is to be found in an action at law. His claim is legal.

Sir,—Can a member of the College of Surgeons, not a licentiate of the Hall, recover, at law, his charge for attending a case of labour?—Merthyr, Dec. 11th.

*** He can, as it is a "surgical" case.

Sir,—How am I to treat a decent person in my neighbourhood who has commenced to practise without having passed either Hall or College, or attended any lectures, excepting on midwifery, a certificate of which he has hung up, framed and glazed, in his *surgery*, calling it his licence to practise? Females daily come to me to engage my attendance upon them in their accouchements. I state my fee to be one guinea for such attendance, but supposing they tell me that "Doctor Wallis" will attend for half that sum, how am I to act in such a case? Am I to compete with a person who obtained his bias to medicine by carrying out a physic-basket five years since, or am I to denounce him as an impostor, or appeal to legally-constituted bodies on the subject?—MEDICUS.

*** Treat the "Doctor" as you would any other midwife, man or old woman, and maintain or lower your fee as discretion may dictate in the neighbourhood of a nuisance; but if he set to work as an apothecary, then collect evidence of his offences against the law, and furnish the Apothecaries' Company with that evidence, in the completest obtainable form.

Sir,—In case of a death from accident in an hospital, *legally* whose duty is it to inform the coroner thereof, or on whom does the responsibility rest? Your obedient servant, G. P.—Dec. 12th. *** On the governors of the hospital, through their agent, the steward, or on any other person who, by the regulations of the establishment, is in the legal custody of the body.

We are unable at present to find room for the last communications of *Mr. Hill*.

Further inquiries relating to *Mr. Browning's* letter render it obvious that no useful purpose could be served by its publication. A controversy would be raised on the subject which, after all, could only be adjusted to the satisfaction of either party in a court of law, when, if the details were matter of sufficient public interest, they might be fully reported.

The cases of *Dr. T. Howden, Jun.*, *Dr. Thos. H. Silvester*, *Mr. W. F. Barlow*, and *Mr. R. H. Semple*, shall be inserted.

A Constant Reader.—The medical officer will *not* be eligible, according to the recently-issued regulations of the poor-law commissioners.

Machaon.—The real "utility" of going to the institution in question has been settled by the three kings at Somerset House. If there be no anxiety to sit under their throne, there need be no attempt made to qualify for a place there, the document in question conferring upon the holder no other new privilege, and certainly presenting in itself no evidence, by its possession, of a knowledge of practical surgery.

Mr. Joseph Irving.—Not having read the book, we can give no opinion of its contents. The person whose name is mentioned as the author is not understood to have ever received any education in medicine.

Alpha.—The coroner may apply to whomsoever he likes, and his power of examination at the inquest is equally extensive, but he cannot legally award the fee or fees under the Medical-Witnesses' Act to any but a legally-qualified medical practitioner. If the last named of the three persons was a graduate in medicine of either of the colleges or universities of England, Ireland, or Scotland, *all* of the gentlemen named by our correspondent are entitled to rank under the head above-mentioned.

Did *Detector* expect anything but a fraud? If he dreamed to be honestly dealt by he knew nothing of the advertisers. Our columns cannot be opened even to expose the deceits of such petty swindlers.

The letter of *Scotus*, on Professor Symes's "bitter experience of lithotomy," next week.

THE LANCET is not written for such dull wits and behind-the-times gentlemen as *Dr. A.* One good method, however, of improving the intelligence and spirit of any journal would be to keep the names and lucubrations of such fogies effectually out of its pages.

The request of *Dr. Willshire*, respecting his "Clinical Remarks upon some points of Dispensary Practice," shall be complied with.

Querist.—The person who says that the author in question is "no chemist," is an impostor, whose ignorance or whose falsity are too palpable for further comment. Probably he is some scribbler who got out of his depth in helping to patch up a "review" on the same subject. Since *Querist* has written anonymously, we cannot notice his other statements.

Vindex regards as an error the statement of "D.," at page 401, that in Staffordshire the writ *de hæretico comburendo* was put in force, and the last witch burned, so lately as the year 1751, or that if not an error, the judge and the sheriff deserved to be hanged for the atrocity, because the penal statute upon witchcraft (one, *Vindex* thinks, of James I.) was repealed by 9 George II. cap. 5, and was even then wholly obsolete. He adds, "It is disgrace enough to our legislation that those unholy statutes should so long have stained it, and that so good a judge and virtuous a man as Sir Matthew Hale should, even 200 years ago, have convicted under its provisions, but that only 90 years since so shocking an occurrence should have taken place, would brand us with infamy indeed, did it not startle belief."

Messrs. Bewley and Evans, of Dublin, object to Mr. Bullock taking upon himself the censorship of pharmacy, which they consider that he assumed in THE LANCET of Dec. 10, and in a letter from them this week they explain their reasons for that objection, with which, however, as journalists, we have nothing to do, since every reader can reject Mr. Bullock's interference, or admit its propriety, just as they please, without aid from other writers. The admission of Mr. Bullock's remarks into our columns appears to require only the following quotations from Messrs. Bewley's letter. The first relates to an objection to Mr. Bullock's "continuing to designate *his* citrate of iron and *ammonia* (ordinarily named ammonio-citrate of iron) by the erroneous name of *citrate of iron*, a name which, in every work on chemistry, is applied to another salt." Messrs. B. add that the animadversion of Mr. Bullock on Dr. Ure's statement, or mis-statement, of Liebig's opinion of the tribasic character of the citrate, is of no value, because, whether an error of Dr. Ure or not, "the therapeutic value of the article in question is no more affected by it than by the parallax of a planet." Finally, they profess to laugh at the comparison made between the "chalybeate water," at sixpence a dose, and the "full dose" of ammonio-citrate of iron for a farthing, as particularly distinguished by "generous disinterestedness." Messrs. Bewley's "common error respecting the chalybeate" has not appeared in THE LANCET, and need not therefore be here corrected. Future remarks on the subject can, consistently with our rules, only be published as advertisements.

We have received the communication of *Dr. W. F. Bow.*

The letters of *C.*, *M. D.*, and *Mr. Nelson*, next week.

The remarks on the physiology of sleep manifest only what *W. S.* "thinks," and what "seems" to him to be true. Some *facts*, whose application to the subject is undoubted, would be more acceptable.

A Licentiate of the Hall.—We cannot tell what are the intentions of the poor-law commissioners. We can only judge them by their announcements and past proceedings, and so must our correspondent. They will enforce the regulations if possible. They *can* refuse to ratify the re-appointments referred to. No statement has been made by them with regard to "surgeons already in office." The old fee is demanded, but the testimonials are dispensed with. Our correspondent's fifth question is answered in the above replies. The "plan of reform" will be found in THE LANCET of Dec. 3rd.